Repair Manual

Audi A3 2013 ➤ ,
Audi A3 Sportback 2013 ➤ ,
Audi TT 2015 ➤ , Audi Q3 2019 ➤ ,
Audi Q3 China 2019 ➤

7-Speed Dual Clutch Transmission 0DL

Edition 11.2023

List of Workshop Manual Repair Groups

Repair Group

00 - General, Technical Data

30 - Clutch

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35 - Gears, Shafts

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Technical information should always be available to the foremen and mechanics, because their careful and constant adherence to the instructions is essential to ensure vehicle road-worthiness and safety. In addition, the normal basic safety precautions for working on motor vehicles must, as a matter of course, be observed.

Contents

00 – General, Technical Data

1 Identification

(Edition 11.2023)

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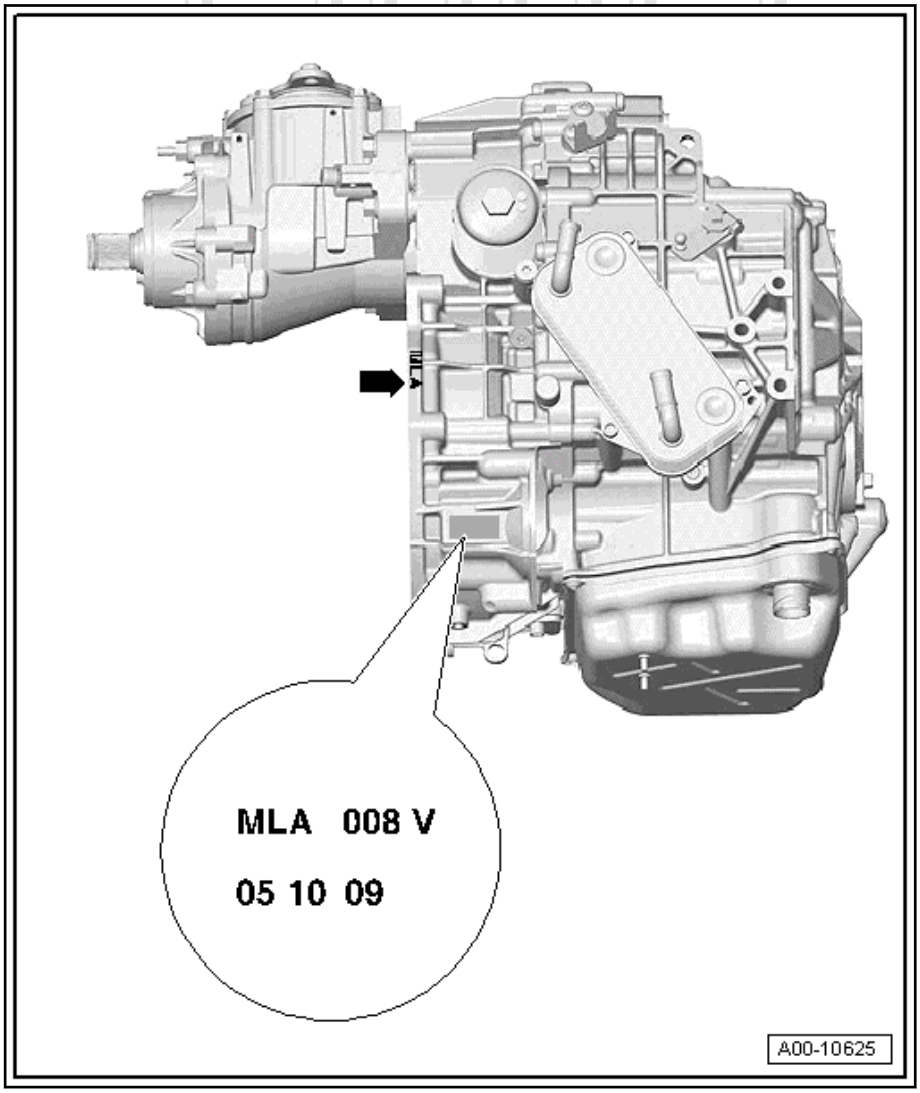
⇒ “1.1 Transmission Identification”, page 1

⇒ “1.2 Bevel Box Identification”, page 2

1.1 Transmission Identification



The transmission code is located on the transmission near the starter and on the transmission flange -arrow-.

Example

- MLA = Transmission code
- 10/05/2009 = Production date October 5th 2009.
- The rest of the numbers depend on manufacturing.

- The transmission code is also on the vehicle data labels.
- Vehicle data label component location. Refer to ⇒ Maintenance ; Booklet 820 .

1.2 Bevel Box Identification

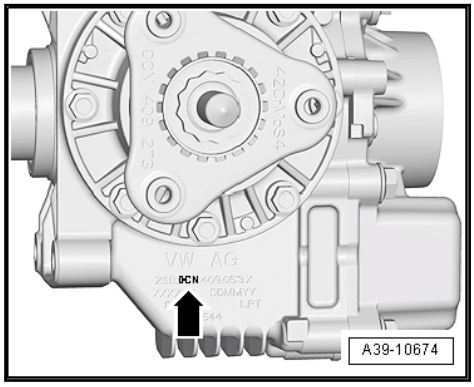
Audi RS3 / TT RS

In the Audi RS3 and TT RS the bevel box 0CP with Index “E” and “H” is installed.

For the bevel box “0CP.409.053.E” the gear oil level is under the fluid filler hole. Pay attention to the notes in the chapter. Refer to ⇒ “3 Gear Oil”, page 98 .

The driveshaft is attached on these bevel boxes and not bolted.

Bevel Box Code Letters and Part Number -arrow-



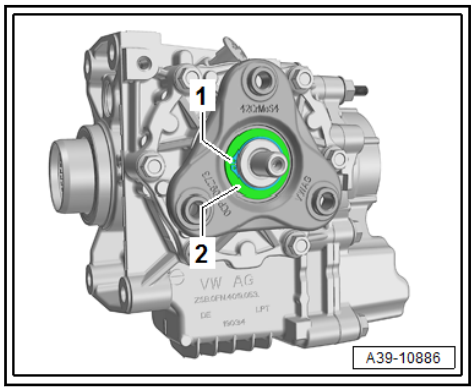
Audi Q3

Bevel box “0CP”: The output flange is attached with a circlip.

Bevel box “0A6”: The output flange is attached with a hex nut.

Audi RS Q3

The driveshaft is attached on these bevel boxes “0CP” and not bolted.



2 Technical Data

⇒ “2.1 Capacities”, page 3

2.1 Capacities

⇒ “2.1.1 Capacities, 7-Speed Dual Clutch Transmission 0DL”, page 3

⇒ “2.1.2 Bevel Box Capacities”, page 3

2.1.1 Capacities, 7-Speed Dual Clutch Transmission 0DL

Refer to ⇒ ServiceNet References; Rep. Gr. MS

Capacities	Dual clutch Transmission ODL
Refill	7.0L + 0.1L
Change	Approximately 5.5 liters (5.8 qts)
Change Interval	Refer to the ⇒ ServiceNet References; Rep. Gr. MS .
Grease	Dual-clutch transmission oil. Refer to the ⇒ Electronic Parts Catalog (ETKA) .

– Check the transmission fluid level land fill. Refer to ⇒ “9.2 Transmission Fluid Level, Checking”, page 78 .

– Fill the transmission fluid after repairs. Refer to ⇒ “9.3 Transmission Fluid, Draining and Filling”, page 83 .

2.1.2 Bevel Box Capacities

Refer to ⇒ ServiceNet References; Rep. Gr. MS

Capacities	Bevel box 0CP
Refill	0.8 liters (0.85 quarts)
Change	Permanent fill, no change RS Q3: Refer to ⇒ ServiceNet References; Rep. Gr. MS
Grease	Gear oil. Refer to the ⇒ Electronic Parts Catalog (ETKA) .

Capacities	Bevel box 0A6
Refill	0.9 liters (0.95 quarts)
Change	Permanent fill, no change
Grease	Gear oil. Refer to the ⇒ Electronic Parts Catalog (ETKA) .

– Check the gear oil level and fill. Refer to ⇒ “3.1 Gear Oil, Checking Level”, page 98 .

– Fill the gear oil after repairs. Refer to ⇒ “3.2 Gear Oil, Draining and Filling”, page 99 .

3 Safety Precautions

3.1 General Safety Precautions

Pay attention to the following to prevent personal injury and vehicle damage:

Risk of accident due to vehicle rolling

When performing work on the vehicle, it should generally be secured to prevent rolling.

– Automatic transmission/dual clutch transmission: select the “P” selector lever position.

– Manual transmission: select 1st gear.

– Engage the parking brake.

Risk of destroying the electronic components.

Risk of destroying electronic components when disconnecting the battery.

– Always turn off the ignition before disconnecting the battery.

♦ Only connect and disconnect test equipment when the ignition is off.

– Disconnect the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Disconnecting and Connecting .

3.2 Safety Precautions when Working on Vehicles with Start/Stop System

There is a risk of injury if the internal combustion engine starts unexpectedly.

The engine can start unexpectedly when the Start/Stop System is activated on the vehicle. Risk of pinching and pulling parts of the body.

– Turn off the ignition and all electric equipment.

– Place the vehicle key and other start authorization systems (such as smartphones) outside of the vehicle interior.

3.3 Safety Precautions during Road Test with Testing Equipment

Pay attention to the following if testing equipment must be used during a road test:

There is a risk of injury due to unsecured testing equipment.

If the front passenger airbag unit deploys during a collision, testing equipment that is not secured correctly will be throw around the passenger compartment and endanger vehicle occupants.

- Secure testing equipment on the rear seat.
- Have a second person operate testing equipment on the rear seat.
- In vehicles with two seats, the front passenger airbag should be deactivated and the front passenger seat should be moved as far back as possible.

3.4 Safety Precautions when Tow Starting and Towing

Risk of damaging the transmission.

It is possible to damage the transmission by towing the vehicle improperly.

- Place the selector lever in the “N” position to tow the vehicle.
- When towing, do not drive faster than 50 km/h and do not drive over 50 km.

4 Repair Information

4.1 General Information

Transmission

The dual-clutch transmission 0DL “S tronic” is designed like a 7-speed manual transmission. The engine torque is transferred to the transmission via the dual-mass flywheel. It operates like an automatic transmission due to both hydraulically-controlled multi-plate clutches alternating from side to side: the gears are automatically engaged or can be engaged manually in the tip-tronic setting. There is no clutch pedal. Additional information. Refer to ⇒ Self Study Program No. 454 ; 7-Speed Dual Clutch Transmission 0BT .

Shift Mechanism

The parking lock is mechanically engaged by the selector lever cable only in selector lever position “P”. The other selector lever positions and shift functions are transmitted to the Dual-Clutch Transmission Mechatronic - J743- from the Selector Lever - E313- in the selector mechanism via the CAN bus.

Transmission Fluid and Gear Oil

The dual-clutch transmission “0DL” contains only one oil system.

This oil system applies to the wheels/shafts, the final drive, the clutches and the Dual-Clutch Transmission Mechatronic - J743- .

The bevel box has a separate gear oil fill.

Only use transmission fluid as specified in the ⇒ Electronic Parts Catalog (ETKA)

Transmission Fluid Filter - »When To Change«

The transmission fluid filter does not need to be replaced in every case.

Do not replace the filter if:

- The transmission fluid cooler or its O-rings were replaced and no coolant has entered the transmission fluid.
- The seals or transmission O-rings were replaced.
- The transmission fluid pan or Mechatronic were replaced.
- The maintenance interval was reached.

The filter must be replaced if:

- Metal shavings were found in the transmission fluid.
- The clutch is burned or has a mechanical fault.

Shift Point Changes on Inclines and Declines

Additional gear change maps automatically select the gear changes for gradients depending on the accelerator pedal position and vehicle speed.

- The gear change map for extreme uphill stretches is matched to engine output.
- The gear change map for extreme downhill stretches is matched to the braking effect of the engine.
- Direct gear selection by way of the Tiptronic function permits utilization of engine braking action with a specific gear engaged, for example, on a downhill gradient with a trailer.

4.2 Guidelines for Clean Working Conditions

- Thoroughly clean connection points and their surrounding areas with engine or brake cleaner before loosening and allow the cleaned connection points to dry completely.
- Clean the transmission and transmission components using Cleaning Solution - D 009 401 04- .
- Use lint-free cloths for cleaning, for example, the “WYPALL X70/WORKHORSE” cloth made by Kimberly-Clark Professional.
- Seal all open lines and connections immediately with clean plugs or caps from the Engine Bung Set - VAS6122- .
- Place the removed parts on a clean surface and cover them. Use foil and paper. Use lint-free cloths.
- Carefully cover or seal opened components if the repair will not be done immediately.
- Only install clean parts: remove the replacement parts from their packaging just before installing them.
- Protect the disconnected connectors from dirt and moisture and only connect when they are dry.

4.3 General Repair Information

- The highest level of care and cleanliness along with tools that function properly are required to ensure a proper and successful transmission repair. Of course the general safety precautions also apply when carrying out repair work.
- Some general repair information that applies to several procedures throughout this manual is summarized here. They apply to this repair manual.

Guided Fault Finding, OBD and Test Instruments

- Determine the cause of the malfunction as accurately as possible using Guided Fault Finding, OBD and Test Instruments using the ⇒ Vehicle diagnostic tester before starting any repairs on the transmission.

Special Tools

For a complete list of special tools used in the repair manual. Refer to ⇒ Workshop Equipment and Special Tools .

Oil, Environmental and Disposal Regulations

- Handle transmission fluid, gear oil and other fluids with care.
- Dispose of drained fluid properly.
- Follow the legal, environmental, and disposal regulations.

- Follow the instructions listed on the fluid packaging.

Transmission

- Do not run the engine or tow the vehicle when the transmission fluid pan is removed or when there is no transmission fluid.
- Thoroughly clean the connection points and the surrounding area before loosening.
- During installation, make sure the alignment sleeves are fitted correctly.

O-Rings, Gaskets and Seals

- O-rings, gaskets and seals must always be replaced.
- After removing the seals, examine the contact surface on the housing or shaft for burrs resulting from removal or for other signs of damage.
- Thoroughly clean the housing separating surfaces before assembling.
- Always replace paper gaskets, completely remove an old seal and thoroughly clean the sealing surfaces.
- Coat the seals with transmission fluid along the outer circumference and along the sealing lip to install.
- Coat the O-rings with transmission fluid or Vaseline before inserting to prevent them from being crushed during assembly.
- Do not use any other lubricants in the transmission fluid area. Otherwise there is a danger of the hydraulic transmission control malfunctioning.
- The open side of the gaskets point toward the fluid to be sealed in.
- When installing the new shaft seal, make sure the sealing lip does not run on the same point as the sealing lip from the old seal (use press-in depth tolerance).
- Follow the guidelines for clean working conditions. Refer to ⇒ “4.2 Guidelines for Clean Working Conditions”, page 7 .

Circlips

- Do not stretch the circlips.
- Replace damaged or stretched circlips.
- The circlips must rest at the bottom of the groove.

Bolts and Nuts

- Loosen the bolts opposite the tightening sequence.
- Bolts or nuts for securing covers and housings should be loosened and tightened diagonally in stages if no tightening sequence is specified.
- Replace the self-locking nuts.
- Use a wire brush to clean the threads of the bolts that were installed with locking fluid. Then insert the bolts with Locking Fluid - AMV 185 101 A1- .
- The tightening specifications given apply to unoiled bolts and nuts.

4.4 Contact Corrosion

Contact corrosion can occur if inadequate fasteners (bolts, nuts, washers, etc.) are used.

For this reason, only fasteners with a special surface coating may be installed.

Furthermore, only rubber/plastic parts and adhesive made of electrically non-conductive materials are used.

If there are doubts about whether parts can be used or not, use new parts. Refer to the ⇒ Electronic Parts Catalog (ETKA) .

Note:

- Only original replacement parts are recommended. They are checked and are compatible with aluminum.
- The use of Audi accessories is recommended.
- Contact corrosion damage is not covered under warranty.

4.5 Transmission Control Module Safety Functions

If one or more components and/or sensors malfunction, the transmission control module activates the corresponding back-up functions. This guarantees the non-destructive operation of the transmission with the respective impact on the function and quality of changing gears.

When malfunctions are detected by the transmission, there are four possible situations:

- 1.: The fault is stored and a substitute program permits further driving (in some cases with restrictions). The driver is not notified of this status, because it is neither critical for the driving safety nor for the transmission. The transmission range display in the instrument cluster provides a normal display of the engaged selector lever position. The driver will only notice the fault, if at all, in terms of handling problems and should then consult an Audi Service partner immediately.
- 2. Individual selector lever positions will flash in the transmission range display in the instrument cluster. This signals to the driver that the gear selection is currently not possible. This is the case if, for example the driving gear “D” is engaged when driving in reverse (selector lever position “R” and the vehicle is still rolling backwards). In this case the “D” selector lever position flashes in the transmission range display in the instrument cluster. The transmission control module blocks the 1st gear from engaging to prevent damaging the transmission. The 1st gear is engaged after the vehicle comes to a standstill.
- 3. The transmission range display in the instrument cluster is completely illuminated and flashing. The selector lever position can be recognized in the instrument cluster, for example “D” is highlighted. The transmission was overloaded in this case and the maximum temperature in the transmission was exceeded (overheating), for example, due to towing a trailer with an excessively high load.
- 4. A fully illuminated and flashing transmission range display in the instrument cluster is an indication of a serious fault in the transmission. It can no longer be identified which selector lever position is selected in the instrument cluster display. The status is critical for driving safety or for the transmission. Under certain conditions, none of the gears can be engaged.

The flashing transmission range indicator prompts the driver to contact an Audi service partner immediately.

4.6 Impact Wrench, Using

Note the additional information in the repair manual.

Exceptions:

- Impact wrenches are not permitted when working within an open high-voltage battery and when working near natural gas systems. See the General Information.

Removing:

- An impact wrench is generally permitted for removing bolts and nuts.
- Bolts (the bolt head and any projecting threads) and nuts should be cleaned before removing.

Installing:

Using a suitable impact wrench to install bolts and nuts is permitted, as long as the following conditions are met.

- Position the bolts and nuts by hand.
- Only use an impact wrench with an adjustable speed and torque range.
- The impact function of the wrench may not be used.
- The maximum speed of 300 RPM must not be exceeded.
- Use suitable screwdriver bits (such as plastic-coated bits) when working near delicate surfaces.
- Bolts with locking fluid or self-locking nuts must only be installed and removed at low speeds.
- Install or remove bolts and nuts only as far as the stop.
- Bring them to the final tightening specification by hand using a torque wrench.
- For the additional turn, use a torque wrench with a rotation angle function or a fixed wrench.

5 Electrical Components

⇒ “5.1 Component Location Overview - Electrical Components”, page 11

5.1 Component Location Overview - Electrical Components

Refer to ⇒ “1.1 Component Location Overview - Transmission Control”, page 90 .

30 – Clutch

1 Clutch

1.1 Overview - Dual Clutch

Replacement Part Package

1 - Circlip for Dual Clutch End Cover

- ❑ Replace after removing

2 - Dual Clutch Circlip

3 - Drive Plate Circlip

4 - Dual Clutch

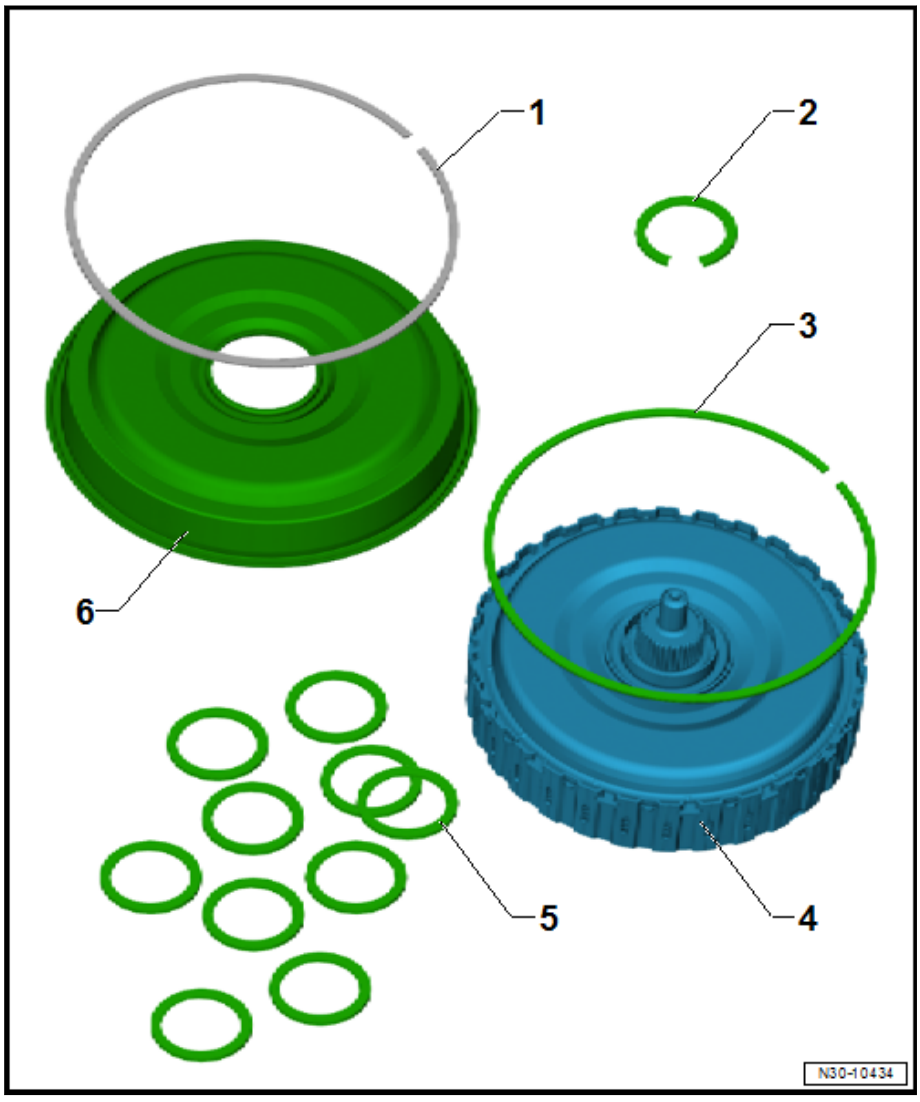
- ❑ Do not disassemble
- ❑ Removing. Refer to ⇒ “1.3 Dual Clutch, Removing”, page 16 .
- ❑ Installing. Refer to ⇒ “1.4 Dual Clutch, Installing”, page 19 .

5 - Spacer Rings

- ❑ 10 spacer rings of different strengths. Graduation in 0.05 mm steps
- ❑ When installing the dual clutch, the strength of the spacer ring must be determined.

6 - Dual Clutch End Cover

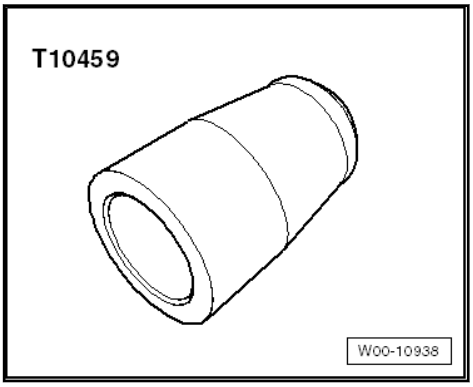
- ❑ Replace after removing
- ❑ Refer to ⇒ “1.2 Clutch End Cover, Removing and Installing”, page 12



1.2 Clutch End Cover, Removing and Installing

Special tools and workshop equipment required

♦ Assembly Sleeve - T10459-



Removing

- The cover and the circlip must always be replaced.

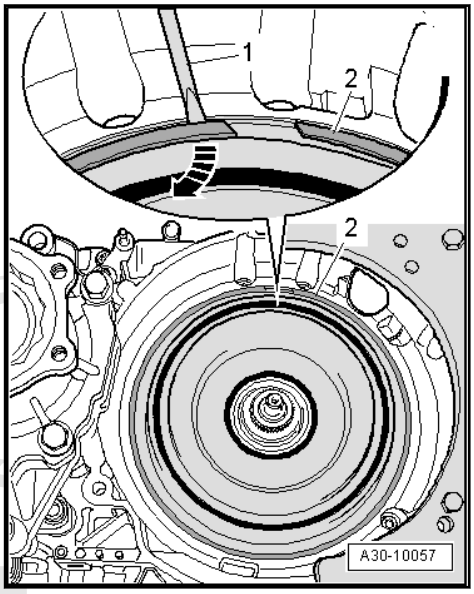
– Drain the transmission fluid. Refer to ⇒ “9.3 Transmission Fluid, Draining and Filling”, page 83 .

– Remove the transmission. Refer to ⇒ “2.1 Transmission, Removing”, page 45 .

– Secure the transmission vertically to the engine and transmission holder. Refer to ⇒ “4 Securing on Engine and Transmission Holder”, page 59 .

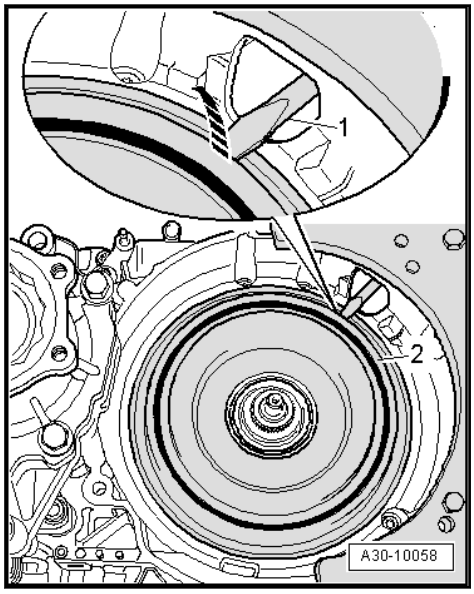
– Replace the transmission fluid filter. Refer to ⇒ “7.3 Transmission Fluid Filter, Removing and Installing”, page 69 .

– Pry out the circlip -2- for the clutch end cover with a screwdriver -1- in direction of -arrow- and remove.



– Remove the clutch end cover -2- with a screwdriver -1- or a tire iron in direction of -arrow- through the side opening in the housing and then remove the clutch end cover.

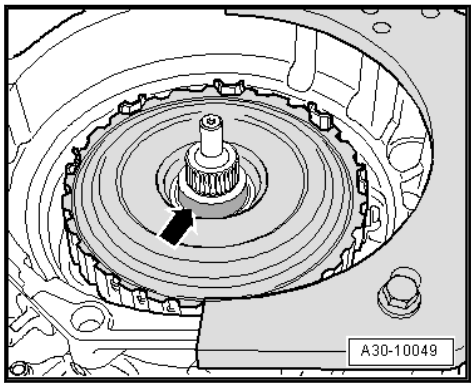
• The removed clutch end cover and the circlip may not be installed again.



Installing

• Replacing clutch end cover and circlip.

– Thoroughly grease the contact surface for the seal from the clutch end cover -arrow-.



– Clean the contact surfaces for the outer seals of the clutch end cover.

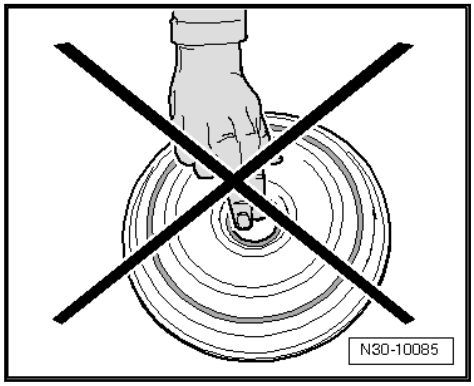
NOTICE

Risk of leaks on the clutch end cover.

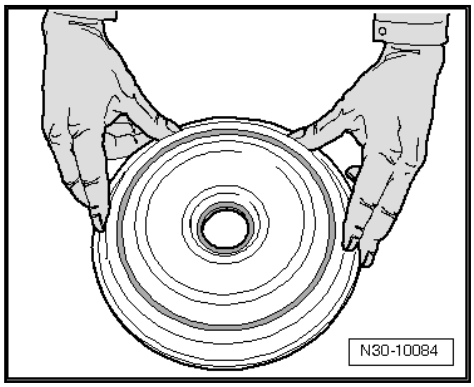
Transmission damage due to oil loss.

– **Do not touch the seal in the inner opening of the clutch end cover!**

– **Do not load the clutch end cover by hitting with a hammer.**



– Only hold the clutch end cover as shown.

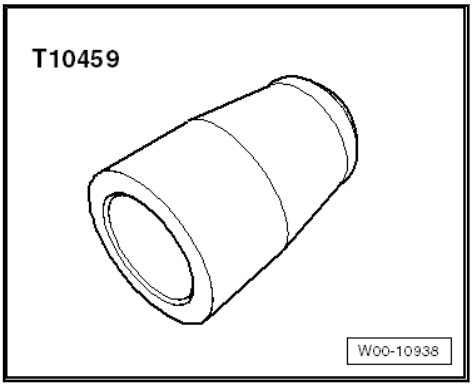


Tip:

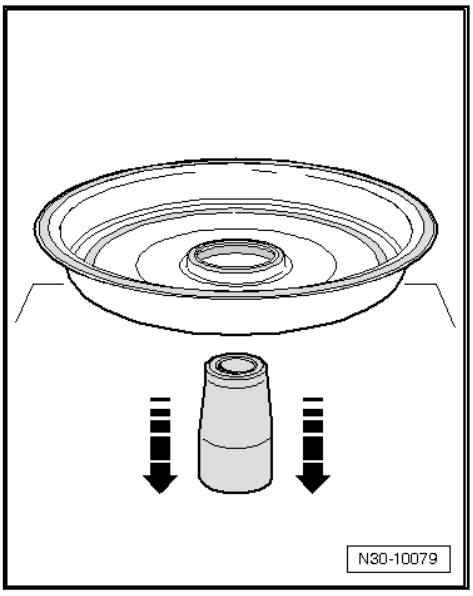
♦ Do not apply any stickers to inside of the clutch end cover. If there is a sticker carefully remove it.

♦ Never oil the center seal or touch with bear hands, it will only be free of leaks when the contact surface of the seal is completely free of oil and dry.

– Degrease and clean the Assembly Sleeve - T10459- before using; do not use scratched sleeves.



– Place the Assembly Sleeve - T10459- on a level surface.
– Guide the clutch end cover horizontally and evenly over the entire Assembly Sleeve - T10459- . This brings the sealing lip into its installation position.



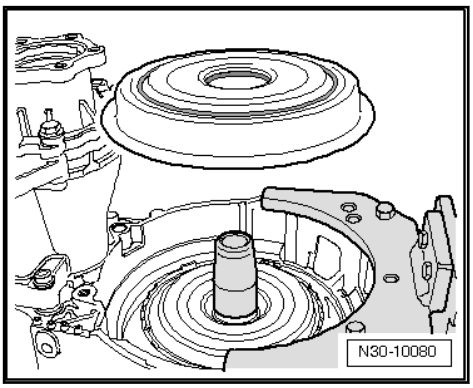
– Remove the Assembly Sleeve - T10459- upward out of the cover and place it on the clutch shaft end.
– Coat the outer cover seal with oil.

NOTICE

Risk of leaks on the clutch end cover.

Transmission damage due to oil loss.

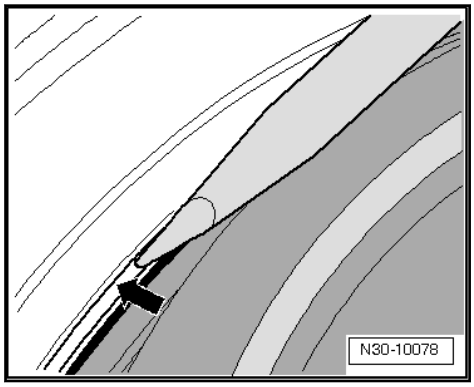
- **Do not touch the seal in the inner opening of the clutch end cover!**
- **Do not load the clutch end cover by hitting with a hammer.**



– Guide the cover horizontally over the Assembly Sleeve - T10459- and press it evenly onto its seat.

It is possible to carefully pry the cover into its place using a -screwdriver-, until the »new« circlip can be installed.

– Install the new circlip.

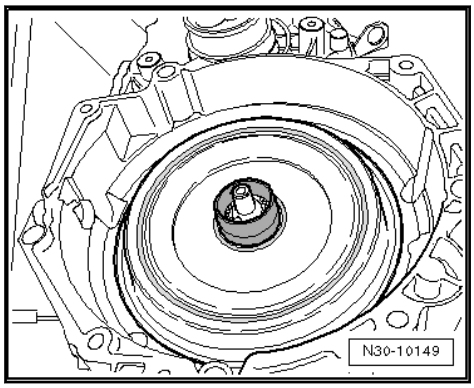


– Only remove the Assembly Sleeve - T10459- after the circlip is installed.

– Install the transmission. Refer to ⇒ “2.2 Transmission, Installing”, page 50 .

– Fill the transmission fluid. Refer to ⇒ “9.3 Transmission Fluid, Draining and Filling”, page 83 .

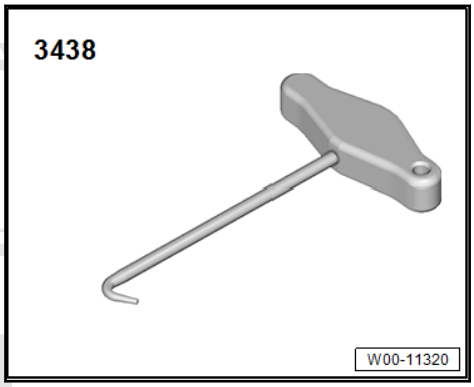
– After installing the transmission, perform the basic setting using the Guided Functions using the ⇒ Vehicle Diagnostic Tester .



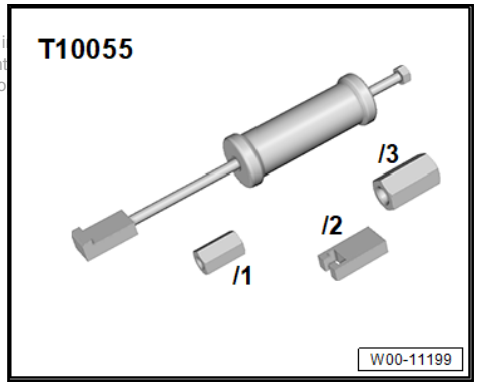
1.3 Dual Clutch, Removing

Special tools and workshop equipment required

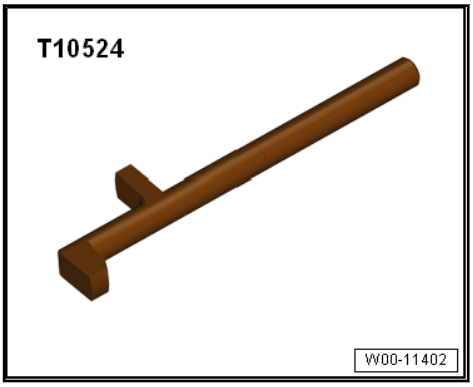
♦ T-Handle Hook - 3438- (quantity: 2)



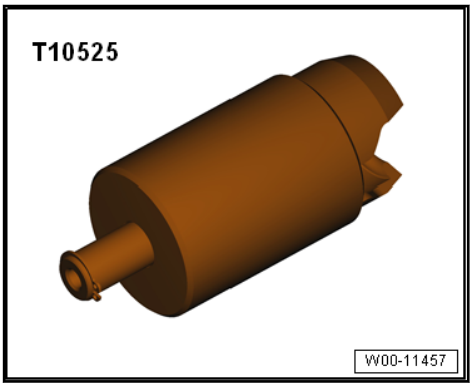
♦ Puller - Unit Injector - T10055-



♦ Retaining Bar - T10524-



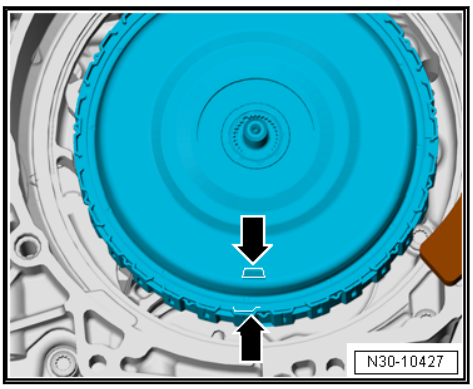
♦ Puller - T10525-



Removing

– Secure the transmission vertically to the engine and transmission holder. Refer to ⇒ “4 Securing on Engine and Transmission Holder”, page 59 .

– Remove the clutch end cover. Refer to ⇒ “1.2 Clutch End Cover, Removing and Installing”, page 12 .



Important! Installation Position of the Drive Plate

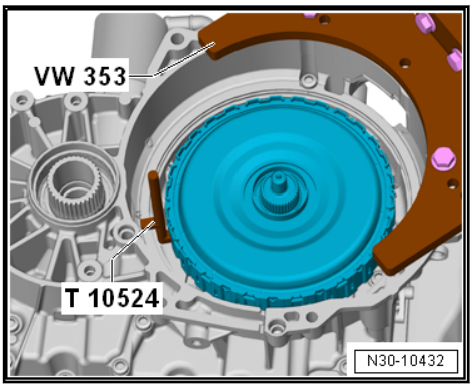
– Check if the mark on the drive plate -arrow- aligns with the mark on the outer clutch plate carrier.

If no marking is present:

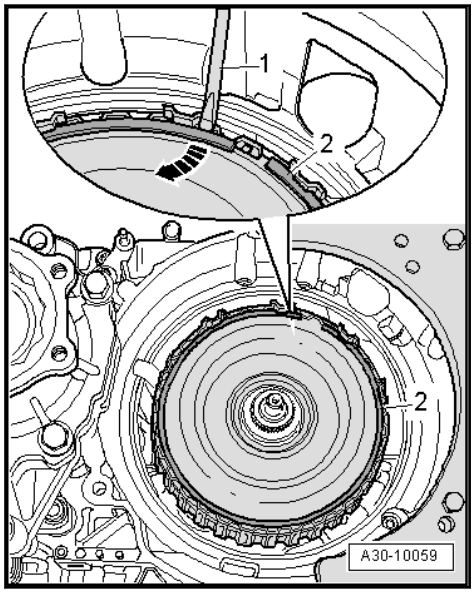
– Mark the location of the drive plate to the outer clutch plate carrier circumference with a waterproof marker as shown.

• When installing, the drive plate must be placed back on this marked location.

– Insert the Retaining Bar - T10524- .



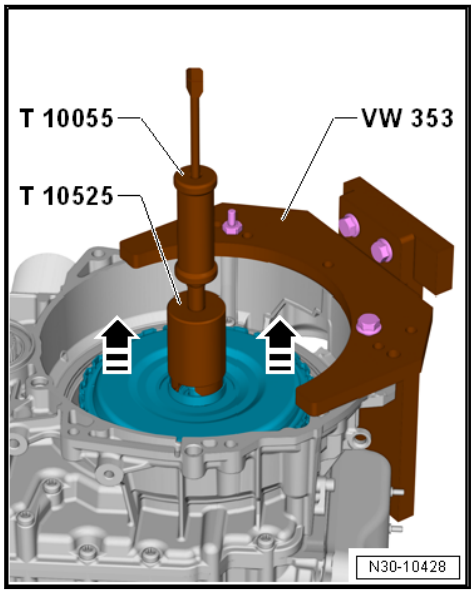
– Pry out the drive plate circlip -2- with a screwdriver -1- in direction of -arrow-.



– Place the Puller - T10525- with Puller - Unit Injector - T10055- on the splines and carefully drive out the drive plate from its seat in direction of -arrows-.

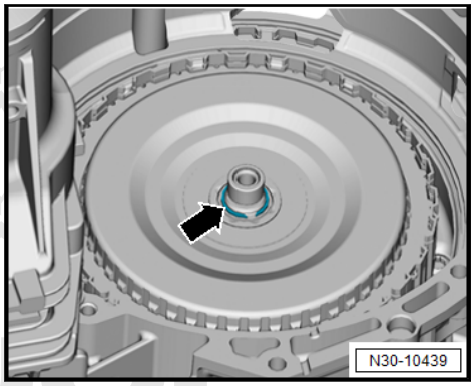
Tip:

♦ Secure the circlip from jumping away. The circlip can fall through an opening into the inner transmission.



– Remove the circlip -arrow- and store it for the time being.

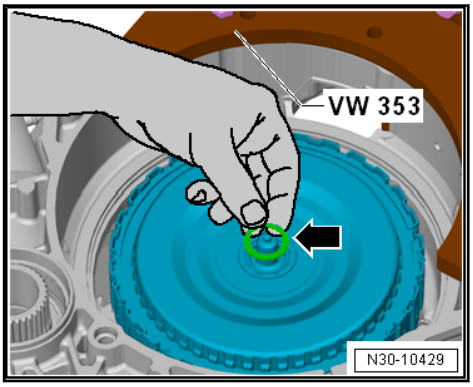
• Do not dispose of the circlip yet it is needed to measure the axial play.



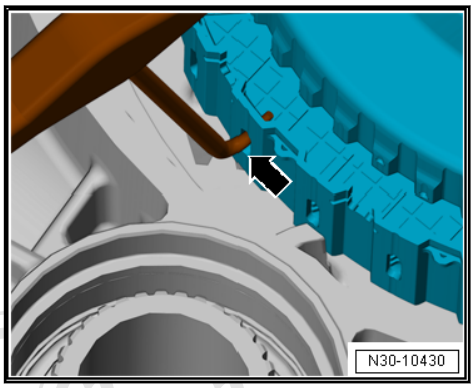
– Remove the shim -arrow-.

Tip:

♦ Carefully remove the dual clutch. Make sure that no other parts of the clutch fall out; for this reason, never turn over the clutch!



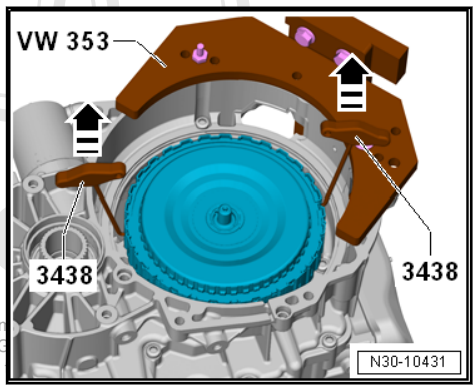
– Hook the two T-Handle Hook - 3438- oppositely in the clutch -arrow-.



– Remove the dual clutch using the T-Handle Hook - 3438- .

Installing

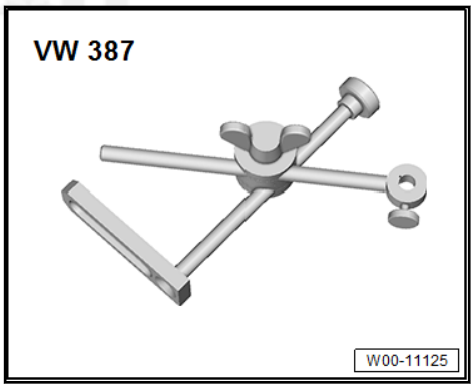
– Installing the dual clutch. Refer to ⇒ “1.4 Dual Clutch, Installing”, page 19 .



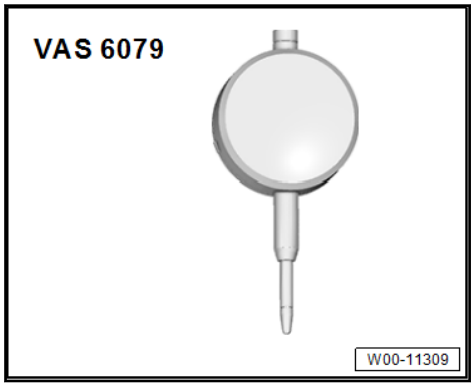
1.4 Dual Clutch, Installing

Special tools and workshop equipment required

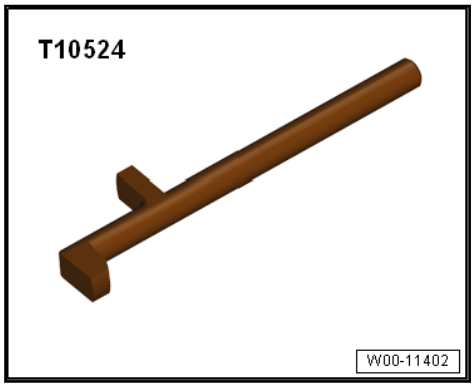
♦ Dial Indicator Holder - VW387-



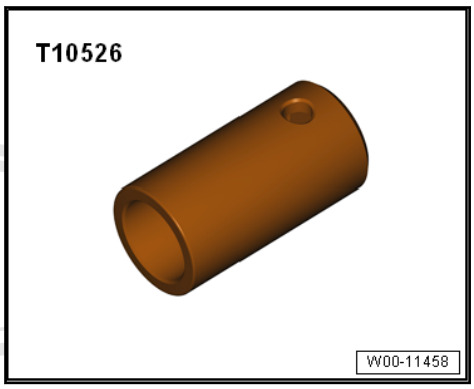
- Dial Indicator - 0-10mm - VAS6079-



- Retaining Bar - T10524-



- Thrust Piece - T10526-



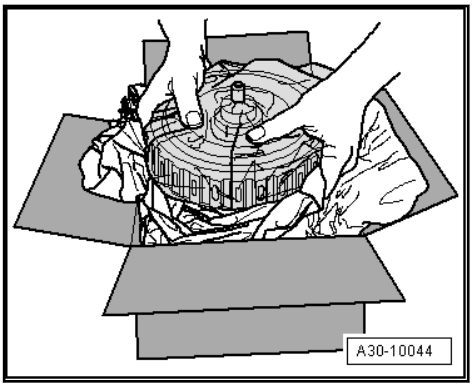
Tip:

- The drive plate must remain engaged between the teeth of the outer clutch plate carrier.
- If the drive plate is loosened, the clutch plates in the dual clutch can slip out of place. The dual clutch may not be correctly set during installation under certain circumstances.

Installing

– Use special caution when removing the dual clutch from the packaging.

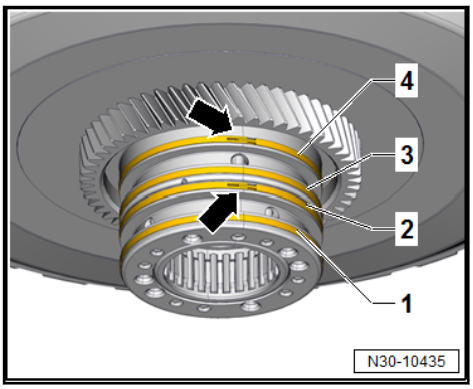
• Do not remove or lift the clutch pack, not even a small amount. The clutch plates can rotate themselves.



– Turn the piston ring by hand. They must move freely and must not stick.

– Pay attention that the piston rings -1, 2, 3 and 4- are seated correctly. The ends of the ring -arrows- and the piston rings -2 and 4- must align with each other.

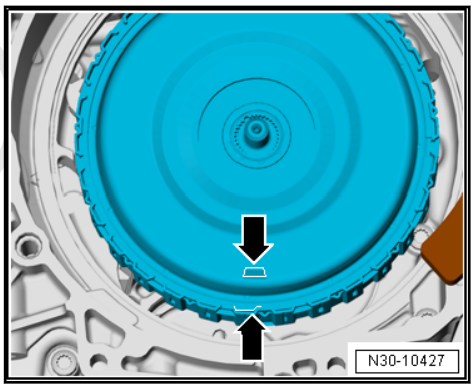
– The ends of the ring -arrows- of the piston rings -2 and 4- should be 180° offset to the ends of the ring of the piston rings -1 and 3- and align.



Important! Drive Plate Position

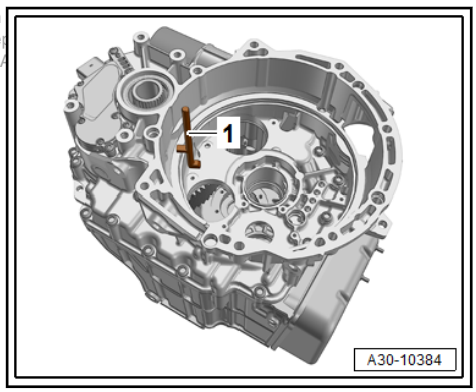
– Before installing check if a mark -arrow- is on the dual clutch.

– If no mark is present, apply a color coding of the drive plate and on the outer clutch plate carrier with a waterproof pen.

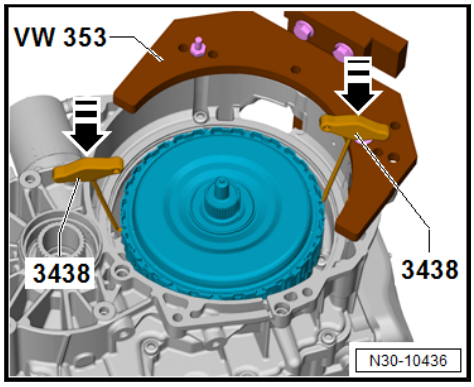


– Insert the Retaining Bar - T10524- .

A second technician should hold the Retaining Pin - T10524- when inserting the dual clutch.



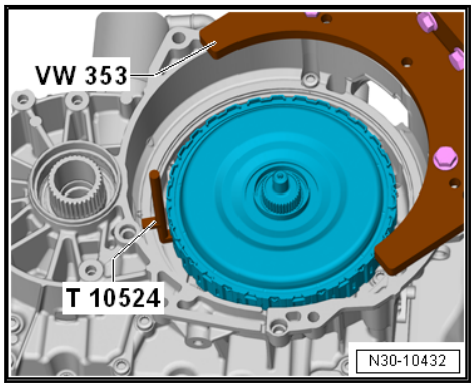
– Carefully insert the -dual clutch-; do not let it fall.
– If necessary insert by lightly turning the clutch.



The dual clutch is in the correct installation position when the Retaining Pin - T10524- has very little play.

- The retaining pin remains there until clutch end cover is installed.
- Do not turn the dual clutch any further, otherwise the Retaining Bar - T10524- could be twisted in its position.

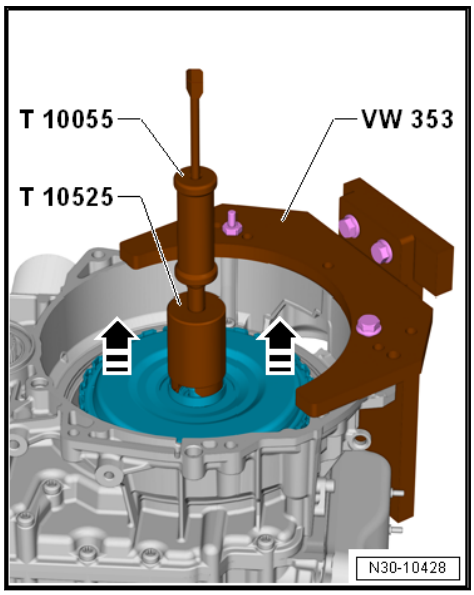
– Pry out the circlip using the drive plate.



– Place the Puller - T10525- with Puller - Unit Injector - T10055- on the splines and carefully drive out the drive plate from its seat in direction of -arrows-.

- The Retaining Pin - T10524- must be held by a second technician when removing.

– Carefully remove the drive plate from the dual clutch -arrows- and move to the side.

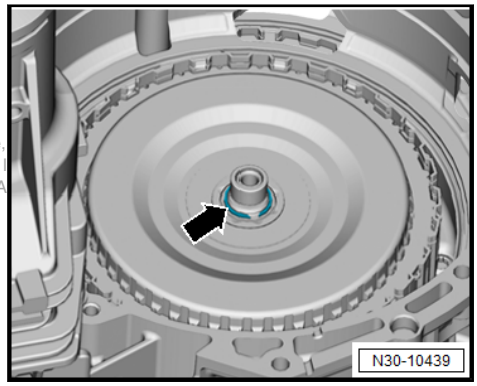


Determine the Shim for the Dual Clutch:

- The Retaining Bar - T10524- remains inserted.

– Install the “old” circlip -arrow- temporarily.

Perform two measurements before removing the ring again.

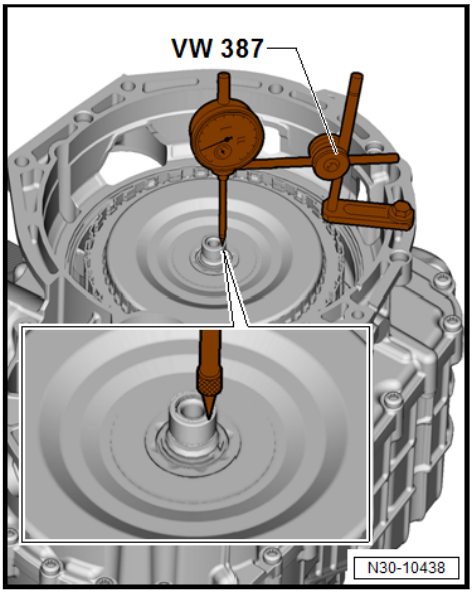


First Measurement (Axial Play of the Shaft)

– Install the Dial Indicator Holder - VW387- on the transmission flange.

– Place the -dial gauge button- on the input shaft.

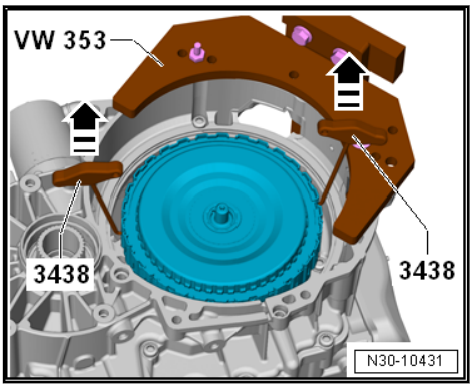
– Adjust the -dial gauge- pretension to 0.



– Use the T-Handle Hook - 3438- to lift the dual clutch forcefully upward in the direction of -arrow- until it stops and note the measurement result.

• The value is needed later for a measurement check for this reason retain the value “A” until the last measurement.

– Name this value “A”.



Second Measurement

- The Retaining Bar - T10524- remains inserted.

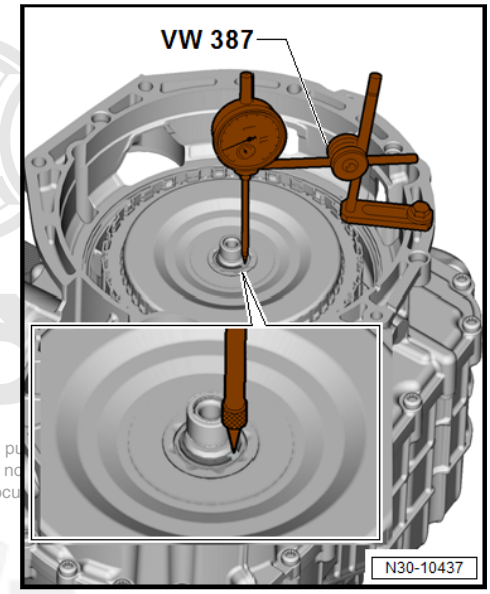
– Place the gauge button -on the hub of the large clutch plate carrier-.

- The plunger must not rest on the circlip.

– Adjust the -dial gauge- pretension again to 0.

– Raise the double clutch upward sharply until stop and note the measurement.

– Name this value “B”.



Now which shim will be installed is calculated:

– Use this formula for this:

Measured value “B” - measured value “A” - 0.11 = thickness of the shim to be installed

– Write down the measurement result.

The shims are staggered in 0.05 mm steps.

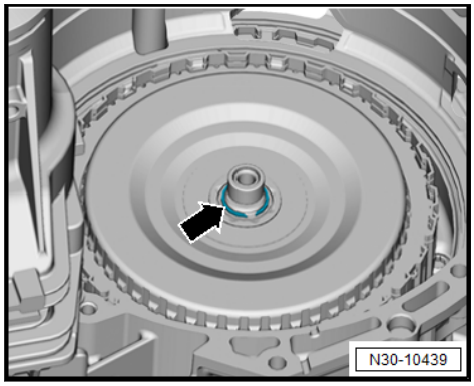
– Measure the shim and determine the shim which comes the closest to the result.

The next largest shim is always used, never install a smaller shim.

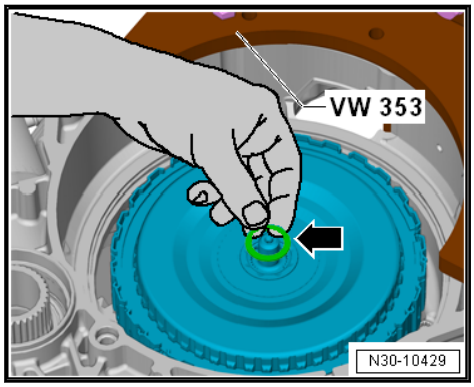
Example:

Determined Dimension of the Shim	New Shim
1.28 mm	1.3 mm
1.26 mm	1.3 mm

– Remove the old circlip -arrow-.



– Install the determines shim.

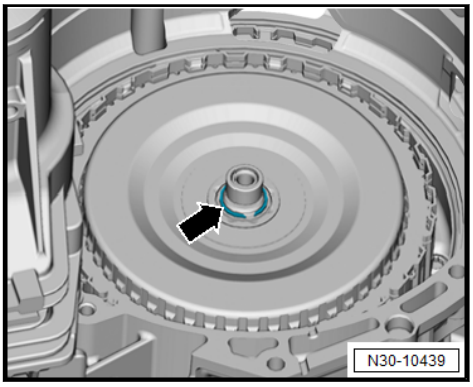


Measurement Check

Another measurement check is performed to check the shim. To do so proceed as follows.

- The Retaining Bar - T10524- remains inserted.

– Install the old circlip -arrow- again.



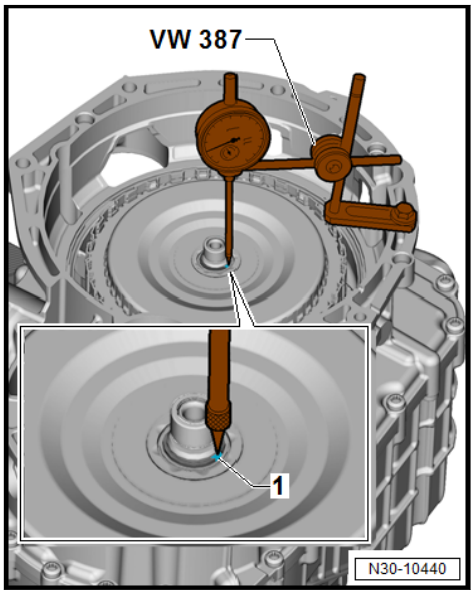
– Place the gauge button -on the hub of the large clutch plate carrier-.

- The test probe must contact the shim -1-.

– Adjust the -dial gauge- pretension again to 0.

– Raise the double clutch upward sharply until stop and note the measurement.

– Name this value “C”.



Now Which Shim will be Installed is Calculated:

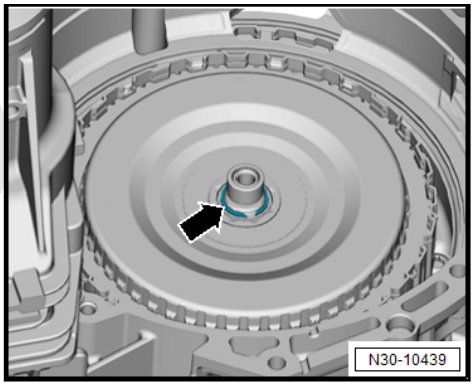
– Use this formula for this:

Measured value “C” - measured value “A” = specified value

The specified value must be between 0.05 to 0.12 mm.

If the specified value is not reached then reach the specified value by installing a thicker or thinner shim.

– Install a new circlip -arrow-.



– Insert the drive plate into the dual clutch.

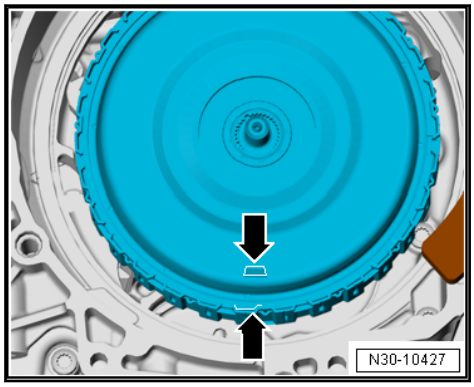
• When installing pay attention that the mark on the drive plate aligns with the mark on the outer clutch plate carrier -arrows-. Make note of markings that have been changed retrospectively.

– Have a second technician hold the Retaining Bar - T10524- in its position and push it slightly outward.

– Using the Thrust Piece - T10526- and a plastic mallet carefully drive the drive plate in its position.

– Install the new drive plate circlip.

– Push the circlip on the opening starting clockwise in the end position.



• The circlip must be completely engaged.

– Check the exact installation position of the circlip and that the circlip is engaged using a screwdriver.

– Now remove the Retaining Bar - T10524- between the dual clutch and the housing.

– Install the clutch end cover. Refer to ⇒ “1.2 Clutch End Cover, Removing and Installing”, page 12 .

34 – Controls, Housing

1 Shift Mechanism

1.1 Overview - Selector Lever Handle

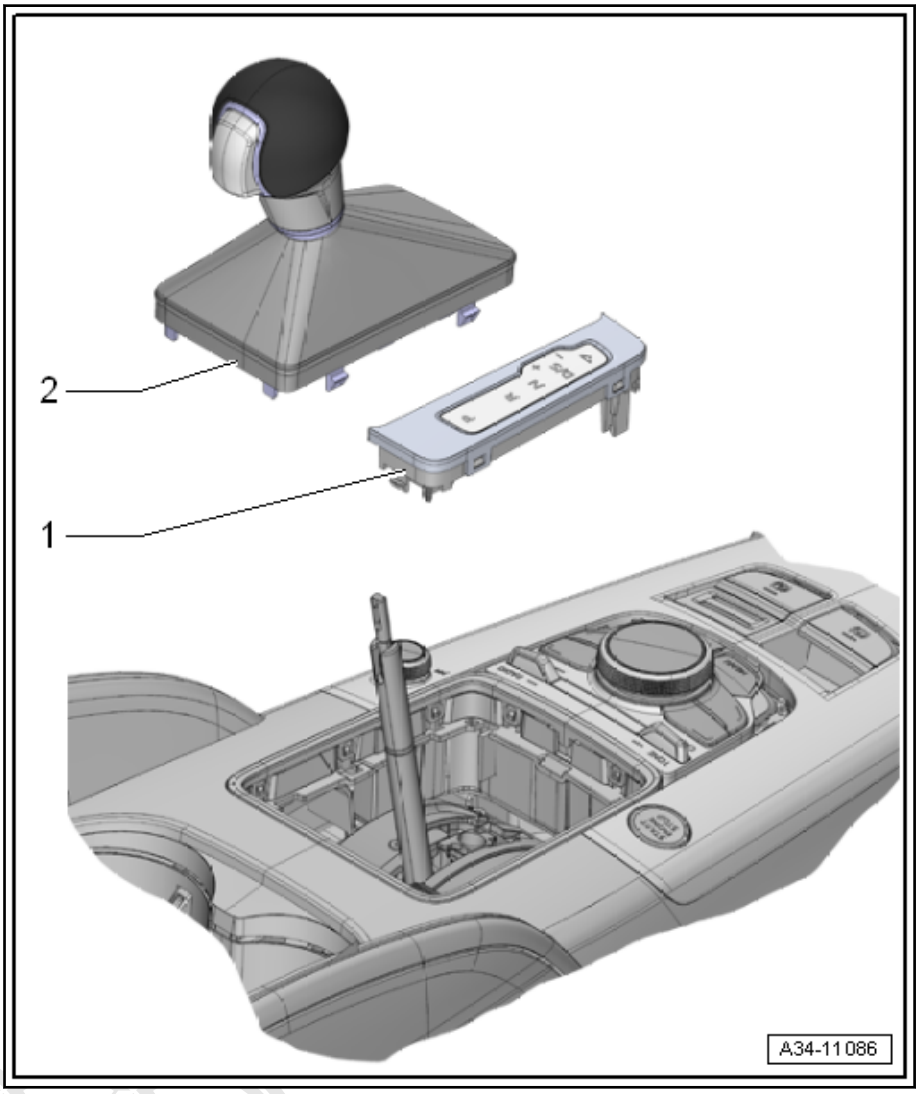
1.1.1 Overview - Selector Lever Handle, RS3

1 - Selector Lever Transmission Range Position Display Unit - Y26-

- ❑ Removing and Installing. Refer to ⇒ Electrical Equipment; Rep. Gr. 96 ; Lamps; Selector Lever Transmission Range Position Display Unit - Y26- , Removing and Installing .

2 - Selector Lever Handle

- ❑ With selector lever boot
- ❑ Removing and Installing. Refer to ⇒ “1.4 Selector Lever Handle, Removing and Installing”, page 34 .
- ❑ Locking Button on Selector Lever Handle, Bringing into Installation Position. Refer to ⇒ “1.5 Button in Handle, Moving into Installation Position”, page 37 .



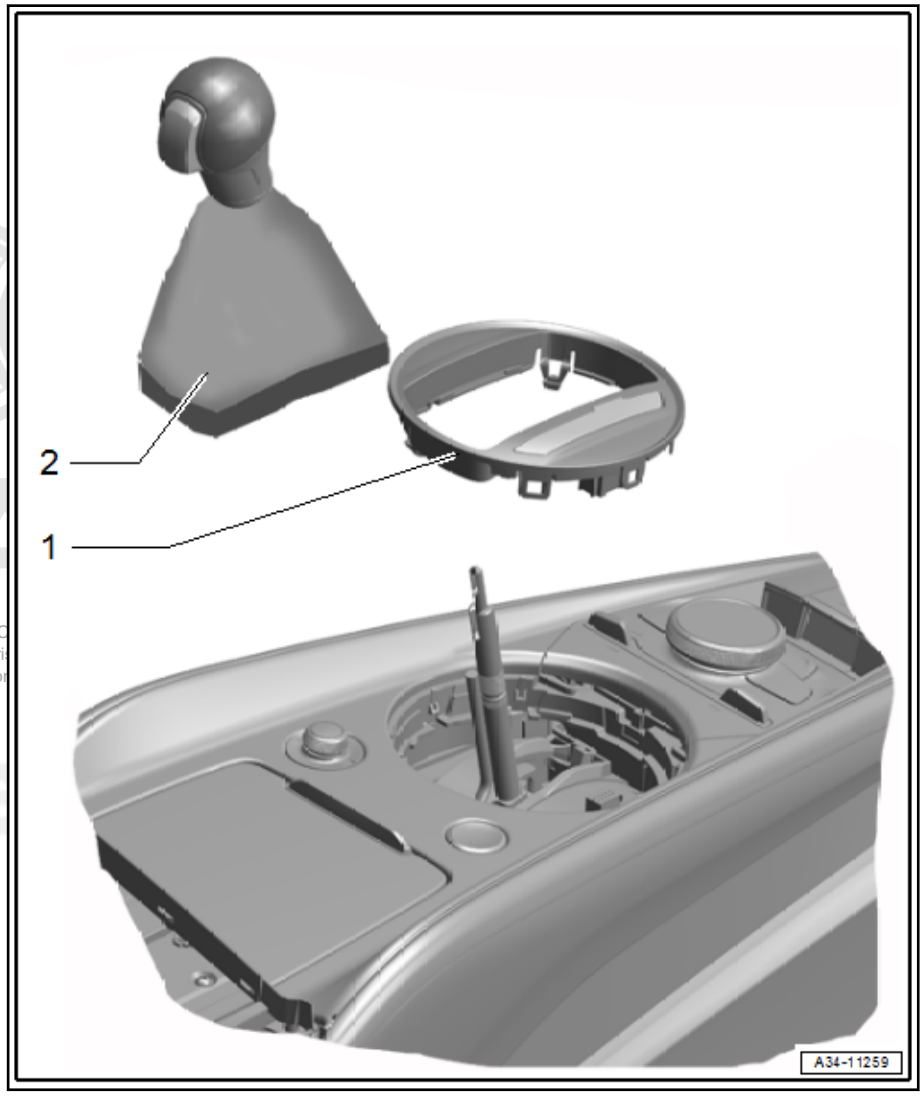
1.1.2 Overview - Selector Lever Handle, TT RS

1 - Selector Lever Transmission Range Position Display Unit - Y26-

- ❑ Unit with trim
- ❑ Removing and Installing. Refer to ⇒ Electrical Equipment; Rep. Gr. 96 ; Lamps; Selector Lever Transmission Range Position Display Unit - Y26- , Removing and Installing .

2 - Selector Lever Handle

- ❑ With selector lever boot
- ❑ Removing and Installing. Refer to ⇒ “1.4 Selector Lever Handle, Removing and Installing”, page 34 .
- ❑ Locking Button on Selector Lever Handle, Bringing into Installation Position. Refer to ⇒ “1.5 Button in Handle, Moving into Installation Position”, page 37 .



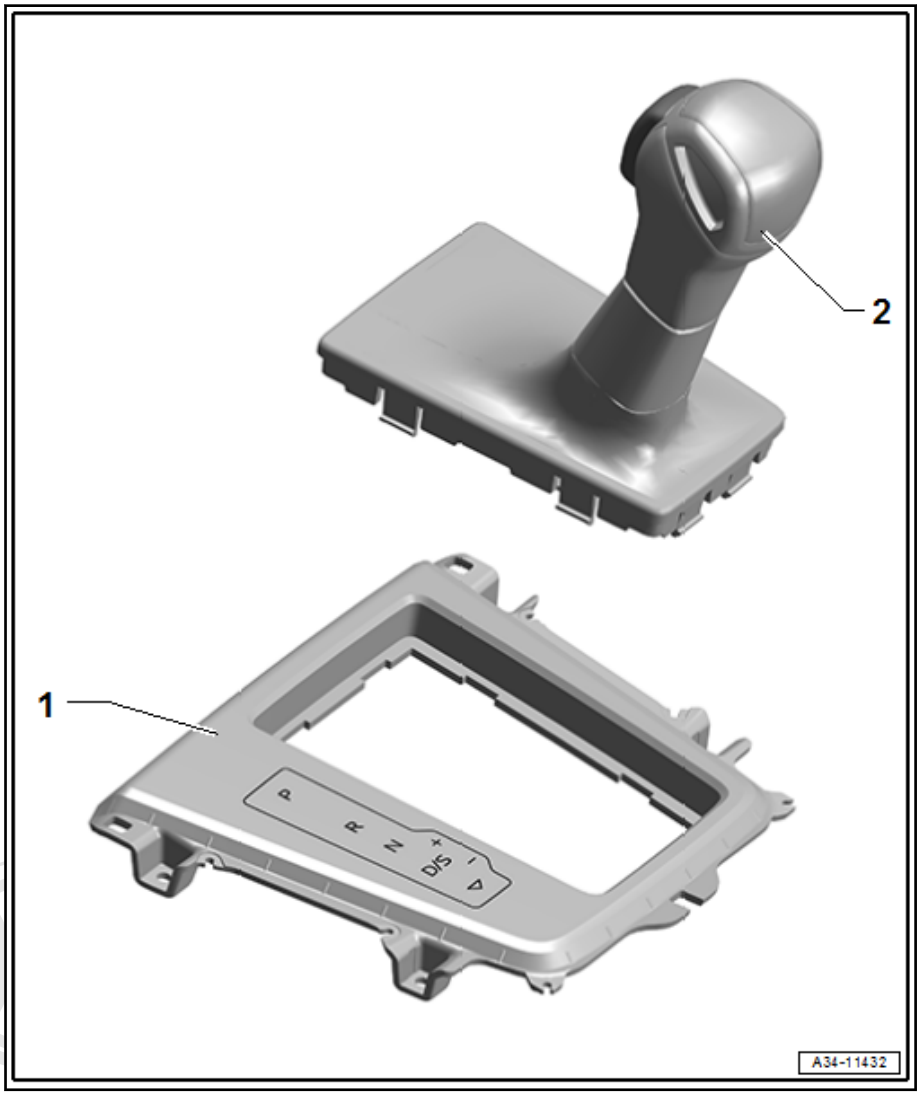
1.1.3 Overview - Selector Lever Handle, Q3

1 - Selector Lever Transmission Range Position Display Unit - Y26-

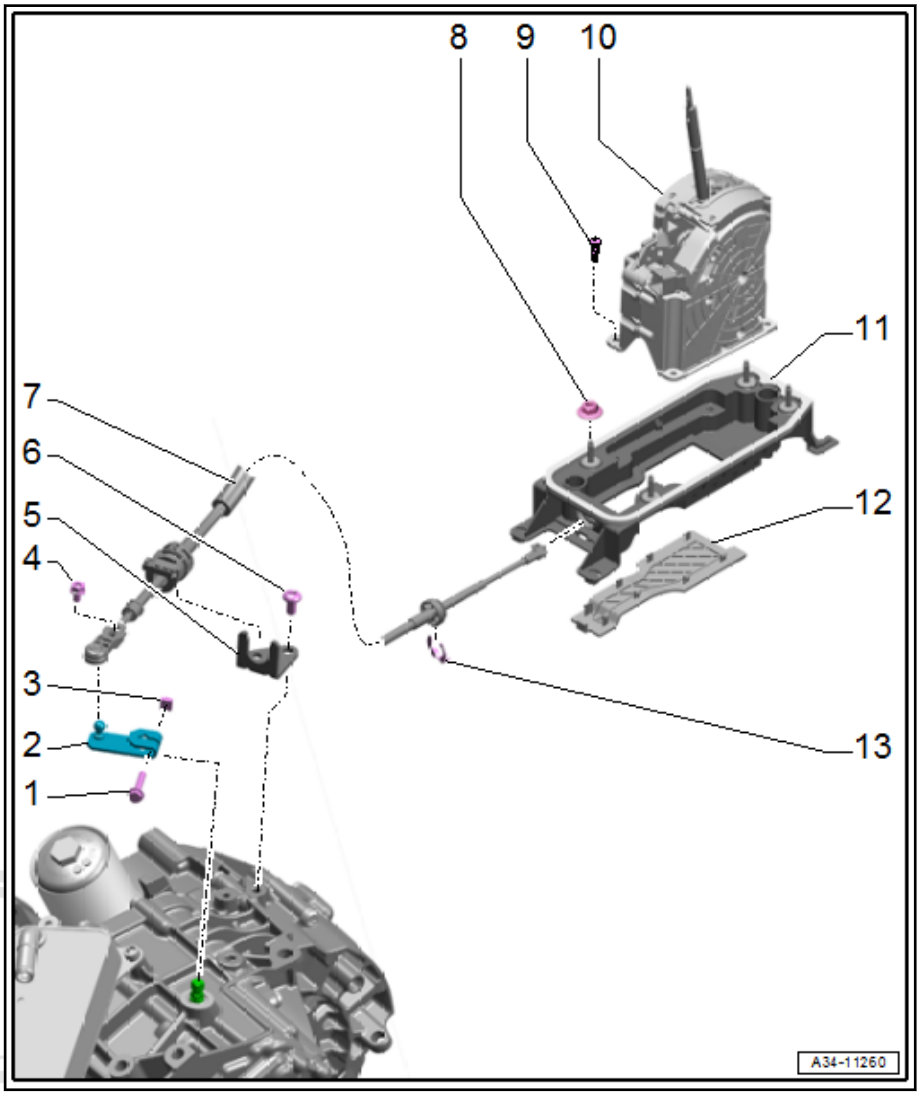
- ❑ Removing and Installing. Refer to ⇒ Electrical Equipment; Rep. Gr. 96 ; Lamps; Selector Lever Transmission Range Position Display Unit - Y26- , Removing and Installing .

2 - Selector Lever Handle

- ❑ With selector lever boot
- ❑ Removing and Installing. Refer to ⇒ “1.4 Selector Lever Handle, Removing and Installing”, page 34 .
- ❑ Locking Button on Selector Lever Handle, Bringing into Installation Position. Refer to ⇒ “1.5 Button in Handle, Moving into Installation Position”, page 37 .



1.2 Overview - Shift Mechanism



1 - Bolt

- ❑ 10 Nm +90°
- ❑ Replace after removing

2 - Shift Lever

3 - Nut

4 - Bolt

- ❑ 12 Nm
- ❑ Selector lever cable adjusting bolt

5 - Cable Bracket

- ❑ For the selector lever cable

6 - Bolt

- ❑ 10 Nm +45°
- ❑ Replace after removing

7 - Selector Lever Cable

- ❑ Can only be replaced with the selector mechanism. Refer to ⇒ “1.6 Shift Mechanism, Removing and Installing”, page 38 .
- ❑ Do not lubricate

8 - Nut

- ❑ 8 Nm
- ❑ For the selector housing on the body
- ❑ Quantity: 4

9 - Bolt

- ❑ 4 Nm
- ❑ Selector mechanism to selector housing
- ❑ Quantity: 4

10 - Shift Mechanism

- ❑ Components of the selector mechanism:
  - ♦ Selector Lever - E313-
  - ♦ Selector Lever Sensor System Control Module - J587-
  - ♦ Selector Lever Park Position Lock Switch - F319-
  - ♦ Shift Lock Solenoid - N110-
- ❑ The components cannot be replaced separately
- ❑ Check using `Guided Fault Finding` using the ⇒ Vehicle diagnostic tester
- ❑ Emergency release from P. Refer to ⇒ “1.3 Emergency Release from P”, page 32
- ❑ Removing and Installing. Refer to ⇒ “1.6 Shift Mechanism, Removing and Installing”, page 38 .

11 - Shifter Housing

12 - Base Plate

- ❑ Replace after removing

13 - Clip

- ❑ Replace after removing

1.3 Emergency Release from P

- The Selector Lever Lock Solenoid - N110- locks the selector lever in the position “P”. The selector lever can shifted out of “P ”with ignition on or motor start, separate brake pedal and pressed button on the selector lever head. Refer to ⇒ “1.7 Shift Mechanism, Checking”, page 40 .
- The selector lever cannot be shifted out of “P” if the power supply to the Shift Lock Solenoid - N110- is interrupted (the battery is discharged or a fuse is faulty) or if the solenoid is faulty. The vehicle cannot be moved because the parking lock is set.

If this is the case:

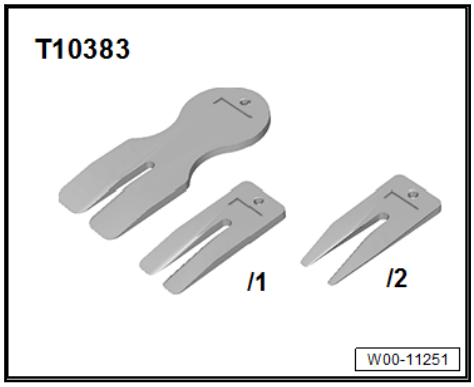
– Check the fuses. Refer to ⇒ Wiring diagrams, Troubleshooting & Component locations.

– Check the battery voltage. Refer to ⇒ Electrical Equipment General Information; Rep. Gr. 27 ; Battery, Checking .

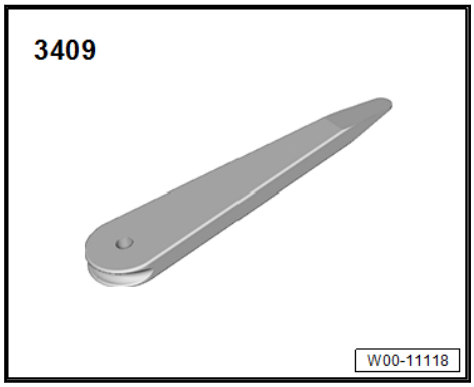
- If the selector lever still cannot shift out of “P” despite Fault Finding, the solenoid must be emergency released. If the selector lever is then switched back into “P”, it is locked again in the position “P”.

Special tools and workshop equipment required

- Wedge Set - T10383-



- Trim Removal Wedge - 3409-

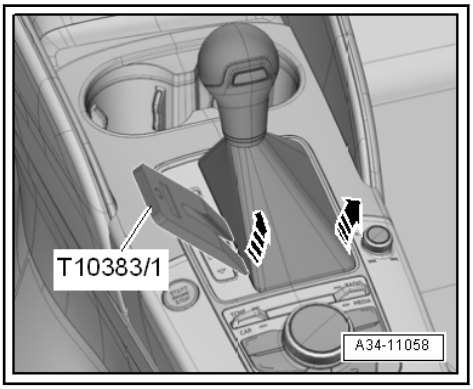


Procedure

– Pull the parking brake button to activate the electro-mechanical parking brake.

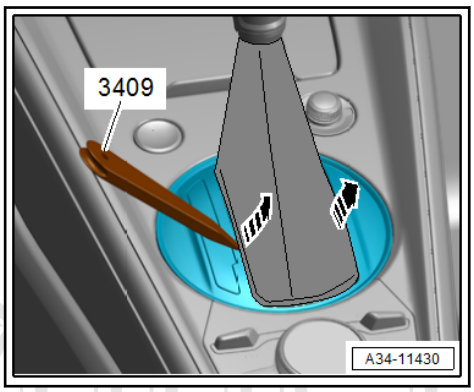
RS3, Q3:

– Carefully pry out the selector lever boot with the Wedge Set -T10383/1- on both sides -arrows- and then fold it upward.



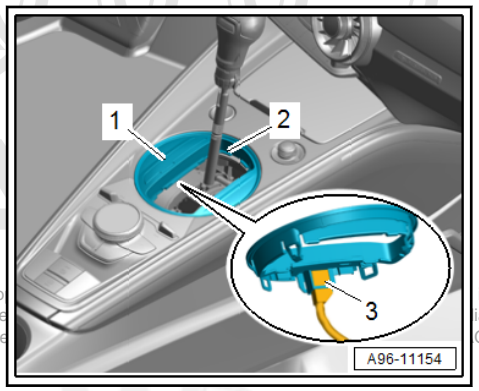
TT RS:

– Unclip the selector lever boot on both sides using the Trim Removal Wedge - 3409- -arrows- and fold it upward.



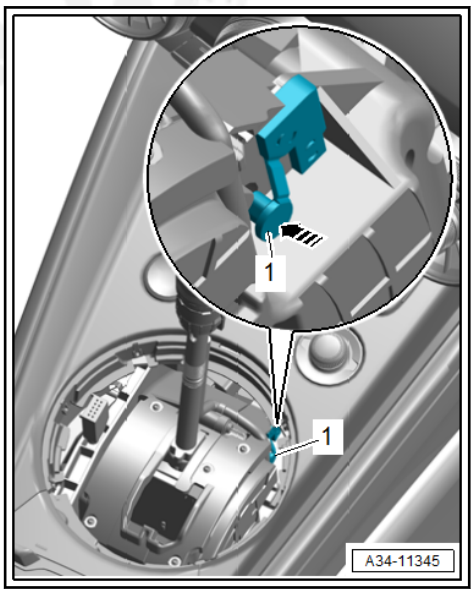
– Release the catches -2- and remove the selector lever transmission range position display unit -1- upward.

– Release and disconnect the connector -3-.



– For example, release the Shift Lock Solenoid -item 1- in the -direction of the arrow- using a screwdriver and hold it in this position.

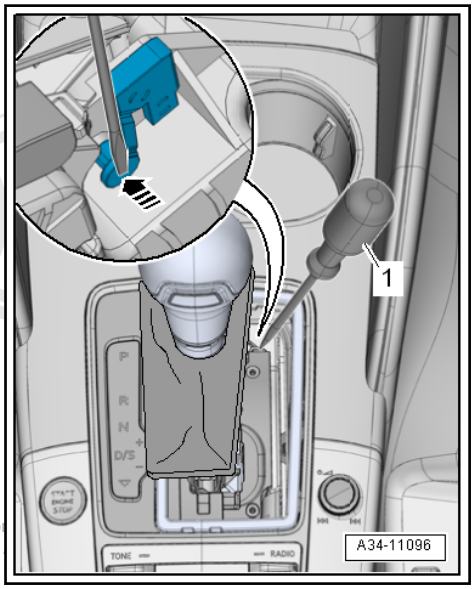
• The solenoid releases the selector lever.



RS3:

– For example, release the Shift Lock Solenoid in the -direction of the arrow- using a screwdriver -1- and hold it in this position.

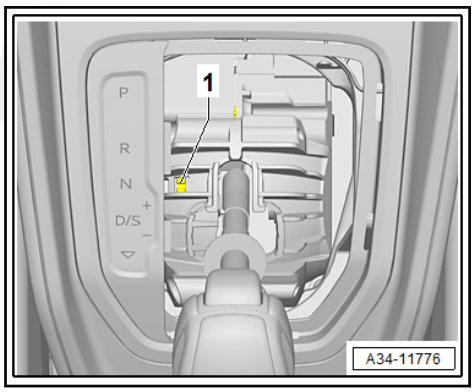
• The solenoid releases the selector lever.



Q3:

– With a screwdriver push the plastic part -1- from the top and hold it in this position.

• The solenoid releases the selector lever.



All Vehicles:

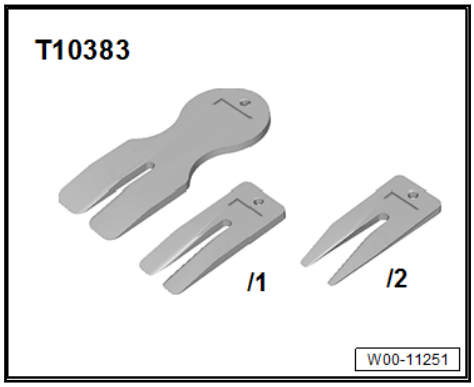
– When the solenoid is released, press the button in the selector lever handle and move the selector lever out of “P”.

If the selector lever is shifted back into “P”, the shift lock solenoid will mechanically lock the selector lever in the “P” position again. The solenoid must be released again.

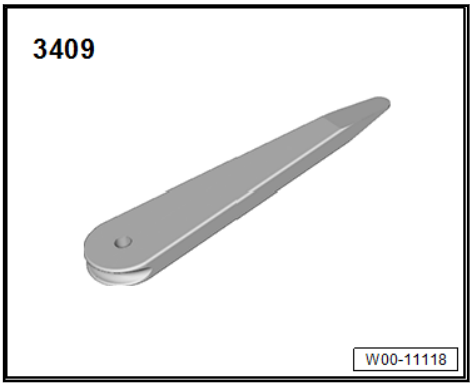
1.4 Selector Lever Handle, Removing and Installing

Special tools and workshop equipment required

♦ Wedge Set - T10383-



♦ Trim Removal Wedge - 3409-



Removing

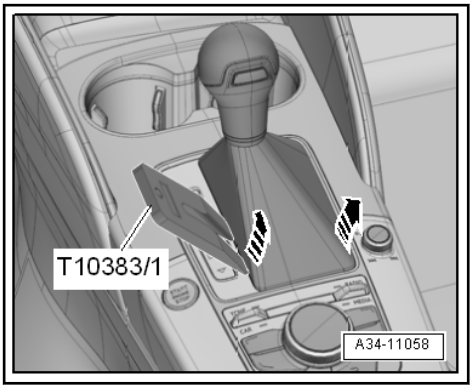
– Pull the parking brake button to activate the electro-mechanical parking brake.

– Move the selector lever into “D/S” position.

– Switch the ignition off.

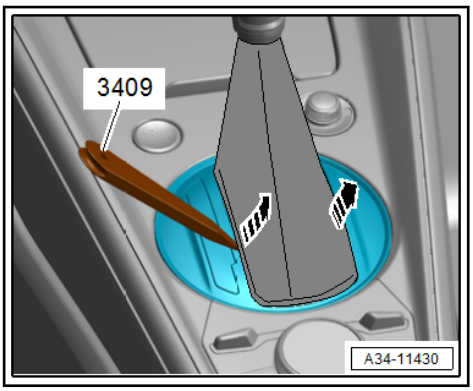
RS3, Q3:

– Carefully pry out the selector lever boot with the Wedge Set - T10383/1- on both sides in direction of -arrows- and then fold it upward.



TT RS:

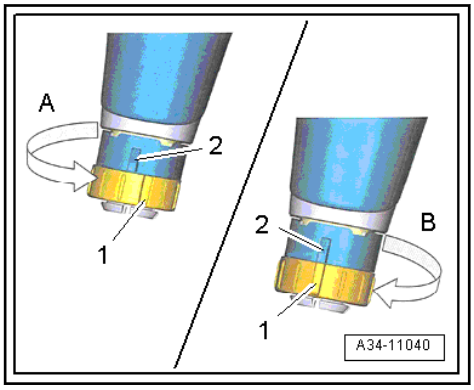
– Unclip the selector lever boot on both sides using the Trim Removal Wedge - 3409- in direction of -arrows- and fold it upward.



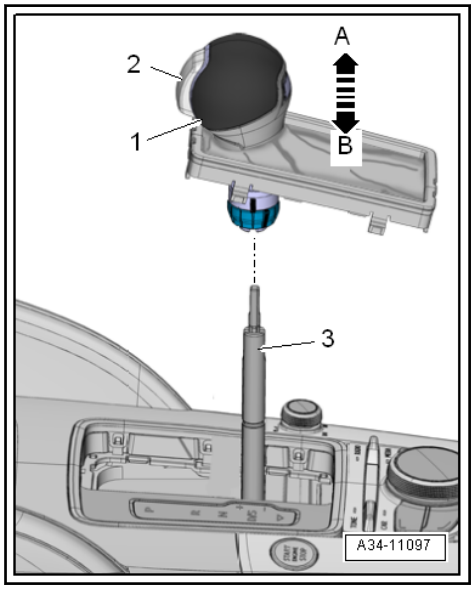
All Vehicles:

– Turn the locking ring all the way in the direction of -arrow A-.

• The tab -1- on the locking ring is offset to the tab -2- on the selector lever handle.



– Remove the selector lever handle -1- upward with the selector lever boot in direction of -arrow A- without touching the locking button -2-.



Installing

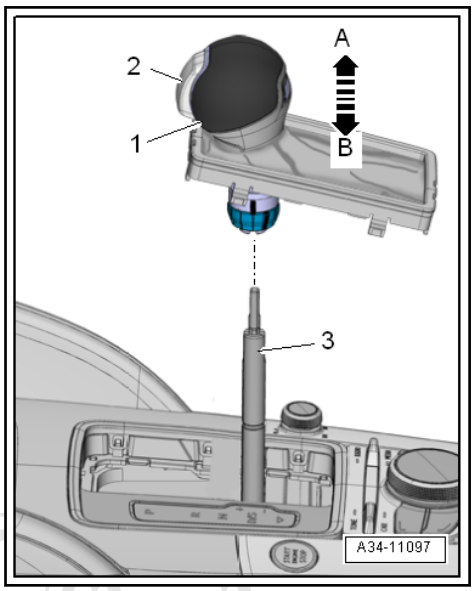
Install in the reverse order of removal while noting the following:

- The locking button -2- points in the direction of travel.

NOTICE

Risk of damaging the selector mechanism by incorrectly installing the selector lever.

– Do not press the locking button on the selector lever handle.

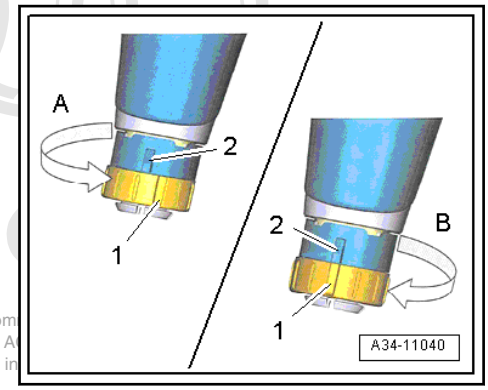


– Press the selector lever handle -1- completely onto the selector lever -arrow B- without touching the locking button -2-.

- The selector lever handle must engage into the ring groove on the selector lever.

– Turn the locking ring all the way in the direction of -arrow B-.

- It must be possible to turn the locking ring. If necessary, press the selector lever handle again.
- The tab -1- on the locking ring is under the tab -2- on the selector lever handle.



Tip:

- The selector lever handle is only properly locked if the locking ring was turned. Only then may the locking button on the handle be pressed.
- The locking button may have an increased resistance to pressure the first time it is pushed after installing the selector lever handle.

– Press the locking button on the selector lever handle.

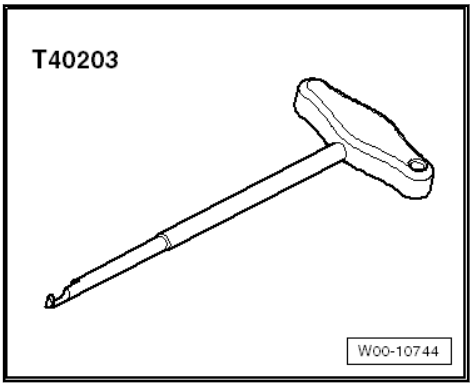
– Fold the selector lever boot downward and clip it in.

– Check the selector mechanism. Refer to ⇒ “1.4 Selector Lever Handle, Removing and Installing”, page 34 .

1.5 Button in Handle, Moving into Installation Position

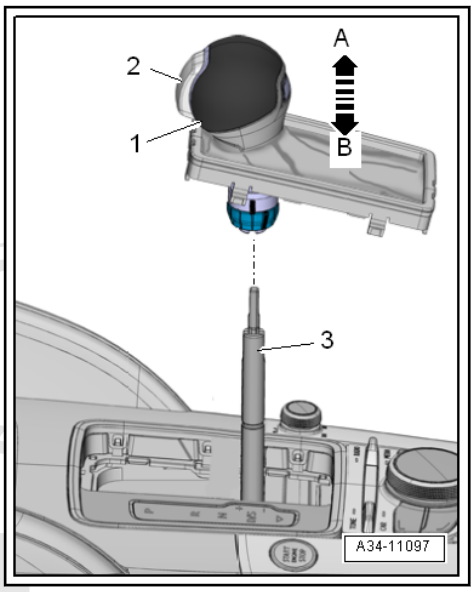
Special tools and workshop equipment required

- Locking Button Removal Tool - T40203-

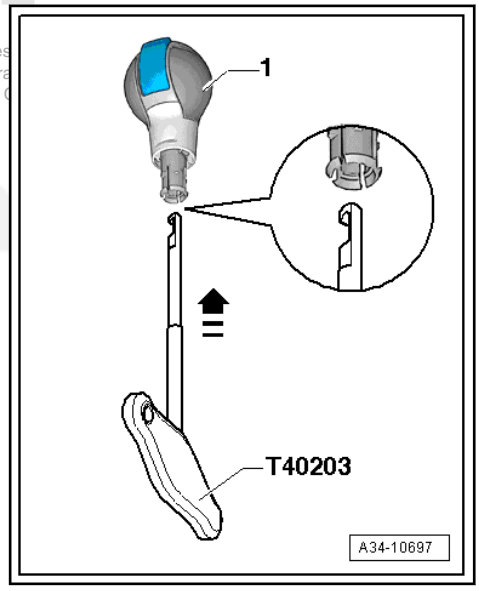


Procedure

- The locking button -2- sticks out in its installation position on the selector lever handle.



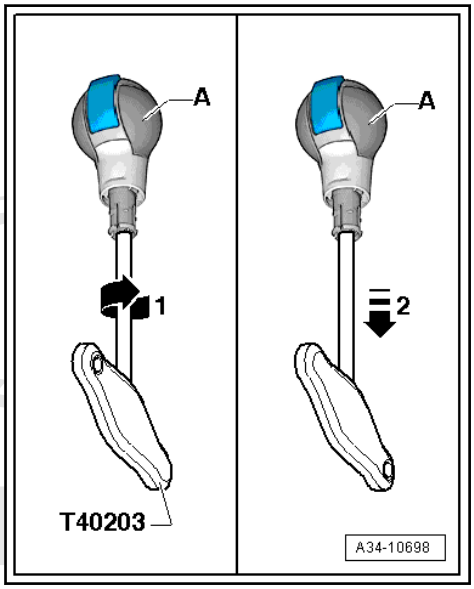
– Carefully guide the Locking Button Removal Tool - T40203- all the way into the selector lever handle -1- in direction of -arrow-.



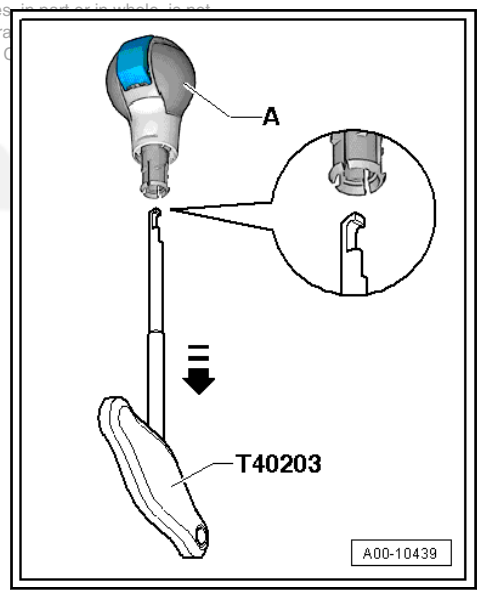
Note:

- For reasons of clarity, the selector lever handle is shown without the selector lever boot. The selector lever boot cannot be removed from the handle.
- The opening on the Locking Button Removal Tool - T40203- faces the locking button and the hook to the left.

– Hold the selector lever handle -A- firmly and turn the Locking Button Removal Tool - T40203- 180° in the direction of -arrow 1-.
– Hold the selector lever handle firmly and carefully remove the Locking Button Removal Tool - T40203- in direction of -arrow 2-.



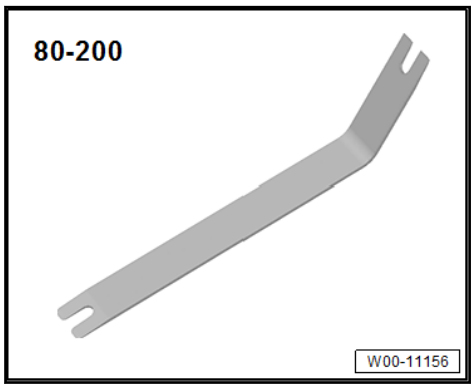
- When removing the Locking Button Removal Tool - T40203- , the locking button on the selector lever handle -A- is pushed out and locked.
- Do not touch the locking button anymore before installing the selector lever handle so that the locking button does not fall back in.



1.6 Shift Mechanism, Removing and Installing

Special tools and workshop equipment required

♦ Pry Lever - 80-200-



Removing

– Remove the selector lever handle. Refer to ⇒ “1.4 Selector Lever Handle, Removing and Installing”, page 34 .

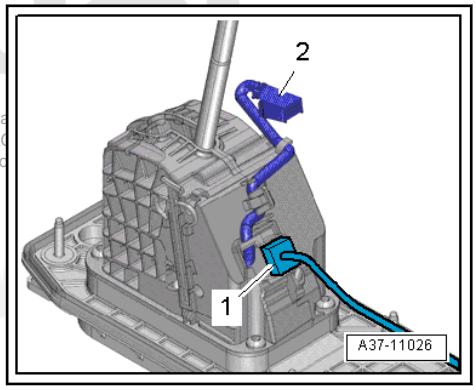
– Remove the Selector Lever Transmission Range Position Display Unit - Y26- . Refer to ⇒ Electrical Equipment; Rep. Gr. 96 ; Lamps; Selector Lever Transmission Range Position Display Unit - Y26- , Removing and Installing .

– RS3, TT RS: Remove the center console insert. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Center Console; Center Console Insert, Removing and Installing .

– Q3: Remove the center console. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Center Console; Center Console, Removing and Installing .

– Disconnect the connector -1- from the selector mechanism to the vehicle wiring harness.

– Remove the air filter housing. Refer to ⇒ Rep. Gr. 24 ; Air Filter; Air Filter Housing, Removing and Installing .



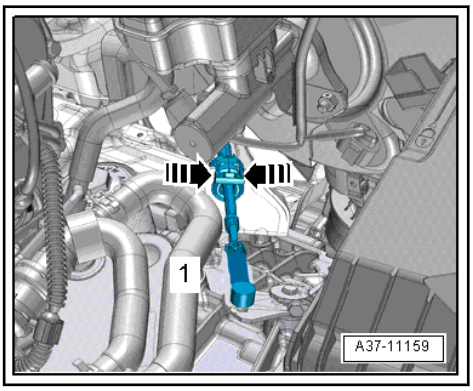
– Pry out the selector lever cable -1- from the selector lever using the Pry Lever - 80 - 200- .

– Squeeze the locking mechanism on the selector lever cable -arrows- and remove the cable upward from the cable bracket.

– RS3, TT RS: Remove the heat shield for the floor. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Trim Strips / Trim / Extensions / Trim Panels; Floor Heat Shield, Removing and Installing .

– Q3: Remove the heat shield for the tunnel. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Heat Shields; Component Location Overview - Heat Shields .

– Remove the driveshaft. Refer to ⇒ Rear Final Drive; Rep. Gr. 39 ; Driveshaft; Driveshaft, Removing and Installing .



NOTICE

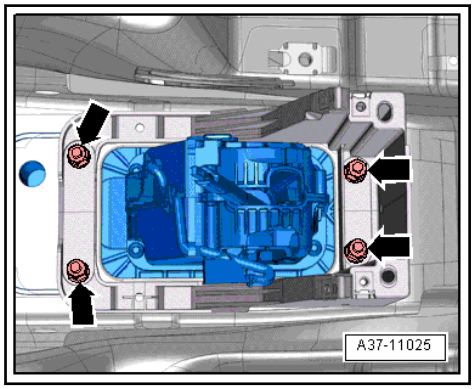
Risk of damaging the operating cable by deforming it.

– Never bend the operating cable too sharply or kink it.

• A second technician is required under the vehicle to remove the selector mechanism.

– Remove the nuts -arrows- in the vehicle interior.

– Remove the selector mechanism downward with the selector lever cable. Guide the selector lever cable out of the cable bracket at the same time.



Installing

Install in the reverse order of removal while noting the following:

NOTICE

Risk of damaging the operating cable by deforming it.

– Never bend the operating cable too sharply or kink it.

– Install the selector lever handle. Refer to ⇒ “1.4 Selector Lever Handle, Removing and Installing”, page 34 .

– Adjust the selector lever cable. Refer to ⇒ “1.8 Selector Lever Cable, Checking and Adjusting”, page 43 .

– Check the selector mechanism. Refer to ⇒ “1.7 Shift Mechanism, Checking”, page 40 .

Tightening Specifications

- ⇒ “1.2 Overview - Shift Mechanism”, page 30
- Refer to ⇒ Rep. Gr. 24 ; Air Filter; Overview - Air Filter Housing .
- Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Trim Strips / Trim / Extensions / Trim Panels; Overview - Heat Shield .

1.7 Shift Mechanism, Checking

Overview:

- 1. Selector Mechanism Function Test. Refer to ⇒ page 40 .
- 2. Checking the closing locks. Refer to ⇒ page 41
- 3. Selector Lever Handle Locking Button, Checking. Refer to ⇒ page 42
- 4. Connectors on Selector Mechanism, Checking. Refer to ⇒ page 42

1. Selector Mechanism Functionality Test

- Never operate the starter when the selector lever is in “D”, “S”, “R” or the “tiptronic gate”.
- If the selector lever position “N” is selected at speeds greater than 5 km/h (3.11 mph), the shift lock solenoid does not engage and locks the selector lever. The selector lever can be shifted into another position.
- If the selector lever position “N” is selected at speeds below 2 km/h (1.24 mph) (almost stopped), the shift lock solenoid may only engage after approximately one second. The selector lever can only be moved out of “N” when the brake pedal is pressed.

Selector lever in “P” position:

– Pull the parking brake button to activate the electro-mechanical parking brake.

– Switch the ignition off.

- The selector lever is locked and cannot be shifted out of the “P” position when the locking button on the selector lever handle is pressed.

– Switch the ignition on.

– Do not press the brake pedal.

• The selector lever is locked and cannot be shifted out of the “P” position when the locking button on the selector lever handle is pressed. The Shift Lock Solenoid - N110- locks the selector lever.

– Press the brake pedal and hold.

• The Shift Lock Solenoid - N110- unlocks the selector lever. It is possible to select a gear. Press the button in the selector lever handle and slowly move the selector lever from “P” and through “R, N, D, S”. While doing this, make sure the transmission range display in the instrument cluster and in the center console matches the selector lever position.

Selector lever in “N” and ignition switched on:

– Do not press the brake pedal.

• After a brief wait time: the selector lever is locked and cannot be moved out of “N” even though the locking button on the selector lever handle is pressed. The Shift Lock Solenoid - N110- locks the selector lever.

– Press the brake pedal.

• The Shift Lock Solenoid - N110- unlocks the selector lever. It is possible to shift into “D” or “R” position.

Selector lever in “D” position and the ignition is switched on:

– Guide the selector lever into the “tiptronic gate”.

• The “D” in the Selector Lever Transmission Range Position Display Unit - Y26- must turn off and the “+” and “–” must turn on.

• The transmission range display in the instrument cluster must switch from “D” to “M1” when moving the selector lever in the “tiptronic gate”.

Selector lever in “D” position and the ignition is switched on:

– Press the locking button on the selector lever handle.

• It is possible to shift into “S” position.

If the specified values are not obtained:

– Perform `Guided Fault Finding` using the ⇒ Vehicle diagnostic tester.

– Adjust the selector lever cable. Refer to ⇒ “1.8 Selector Lever Cable, Checking and Adjusting”, page 43 .

– Check the locking button on the selector lever handle. Refer to ⇒ page 42 .

2. Check the closing locks - vehicles with keyless stop and start systems

– Switch the ignition on.

– Do not move the selector lever into “P” but rather, for example, into “N”.

– Switch the ignition off.

• A warning message must be displayed in the instrument cluster.

• The vehicle cannot be locked.

– Move the selector lever into “P” position.

- The vehicle can be locked.

If the specified values are not obtained:

– Use the ⇒ Vehicle diagnostic tester in `Guided Fault Finding` for Fault Finding.

– Adjust the selector lever cable. Refer to ⇒ “1.8 Selector Lever Cable, Checking and Adjusting”, page 43 .

– Check the locking button on the selector lever handle. Refer to ⇒ page 42 .

3. Selector Lever Handle Locking Button, Checking

Locking Button, Checking Ease of Movement:

- It must be possible to press the locking button without using great force.
- After releasing it, the locking button must come all the way back out by itself.

– If the specified values are not reached, check if the selector lever handle was installed correctly. Refer to ⇒ “1.4 Selector Lever Handle, Removing and Installing”, page 34 .

– Make sure the selector lever is not bent.

Function test:

- The ignition is switched on.

The locking button on the selector lever handle must be pressed for the following gear changes. If the locking button is not pressed, the selector lever cannot be shifted into the specified position.

♦ “P” into “R” and also press the brake pedal

♦ “N” into “R”; stationary, also press the brake pedal after a longer wait time.

♦ “R” into “P”

If the specified values are not obtained:

– Check that the selector lever handle was installed correctly. Refer to ⇒ “1.4 Selector Lever Handle, Removing and Installing”, page 34 .

– Check the connectors on the selector mechanism.

– Check the Shift Lock Solenoid - N110- using the ⇒ Vehicle diagnostic tester in `Guided Fault Finding`.

– Adjust the selector lever cable. Refer to ⇒ “1.8 Selector Lever Cable, Checking and Adjusting”, page 43 .

4. Connectors on Selector Mechanism, Checking

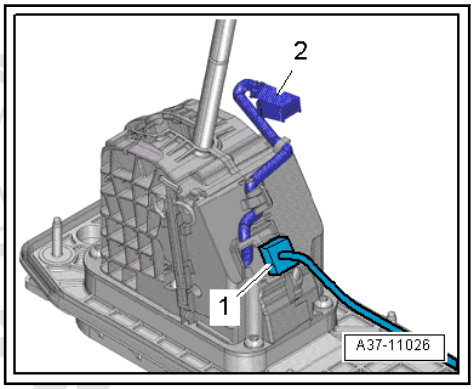
Before repairing or inspecting the connectors, check all control modules in the vehicle for DTC memory entries using the ⇒ Vehicle diagnostic tester in `Guided Fault Finding`. If required, correct any faults.

Check all the control modules for faults stored the DTC memories and erase them if necessary before checking the connectors using the ⇒ Vehicle diagnostic tester.

– Check the connectors. Refer to ⇒ Wiring diagrams, Trouble-shooting & Component locations.

1 - Connector for connecting lines from the selector mechanism to the transmission (with CAN bus wire) and to the Shift Lock Solenoid - N110- and Selector Lever Park Position Lock Switch - E319- .

2 - Selector Lever Transmission Range Position Display Unit - Y26- Connector



1.8 Selector Lever Cable, Checking and Adjusting

Selector Lever Cable, Adjusting

- Selector mechanism and selector lever cable move easily when shifting.
- The selector lever cable rubber grommet is not damaged.

The selector lever cable must be adjusted if:

- The selector lever cable was removed from the transmission.
- The engine and (or) transmission were removed and installed.
- The selector lever cable was removed and installed with the selector mechanism.
- The engine/transmission position was changed, for example, were installed without tension.

– Move the selector lever into “P” position.

– Loosen the adjusting bolt -arrow- for the selector lever cable.

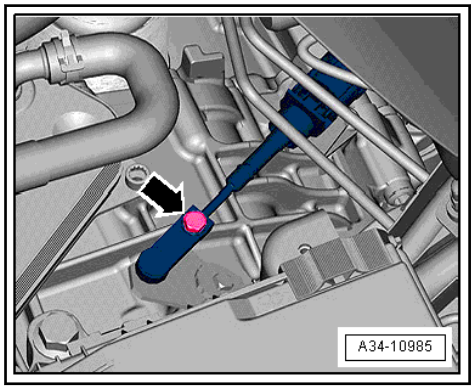
– Set the selector lever on the transmission to “P”. Push the selector lever all the way to the rear opposite the direction of travel to check it.

– Turn both front wheels in one direction, for example by moving the vehicle forward until the detent lever in the transmission engages in the parking lock gear.

• The parking lock is engaged only when it is not possible to turn both wheels in the same direction at the same time.

– Carefully move the selector lever slightly forward and backward without shifting to a different selector lever position.

– Tighten the adjusting bolt -arrow-. The position of the selector lever cable must not change while doing this.



Selector Lever Cable, Checking Adjustment

– Press the button and move the selector lever to the rear approximately 5 mm out of “P” and hold it there. Do not move it into “R”.

– Release the selector lever.

• The selector lever must jump back into “P” by itself.

– Move the selector lever into “N”.

– Press the button and move the selector lever to the rear approximately 5 mm out of “N” and hold it there. Do not move it into “D”.

– Release the selector lever.

• The selector lever must jump back into “N” by itself.

– Press the button and move the selector lever forward approximately 5 mm out of “N” and hold it there. Do not move it into “R”.

– Release the selector lever.

• The selector lever must jump back into “N” by itself.

– If the selector lever does not react as described, repeat the adjustment.

– Check the selector mechanism. Refer to ⇒ “1.7 Shift Mechanism, Checking”, page 40 .

Tightening Specifications

♦ Refer to ⇒ “1.2 Overview - Shift Mechanism”, page 30

2 Transmission, Removing and Installing

⇒ “2.1 Transmission, Removing”, page 45

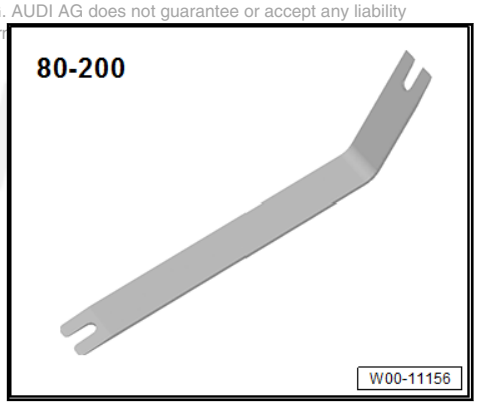
⇒ “2.2 Transmission, Installing”, page 50

⇒ “2.3 Transmission Tightening Specifications”, page 54

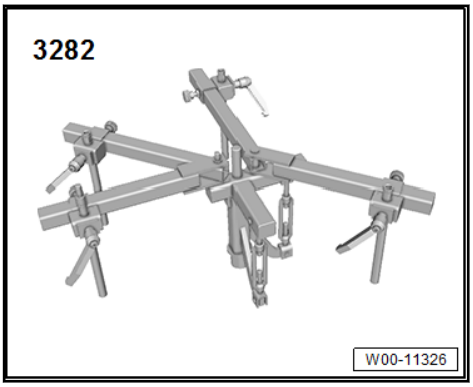
2.1 Transmission, Removing

Special tools and workshop equipment required

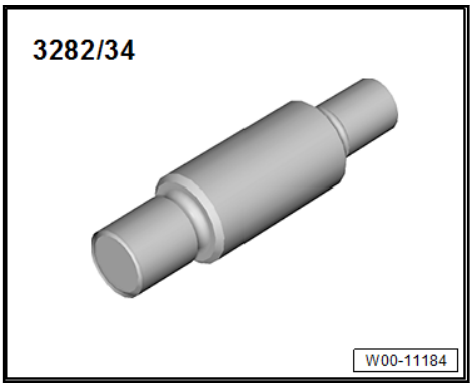
- Pry Lever - 80-200-



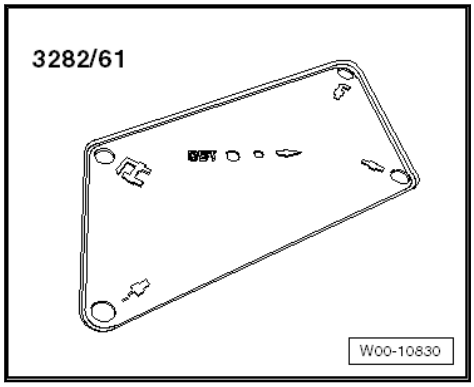
- Transmission Support - 3282-



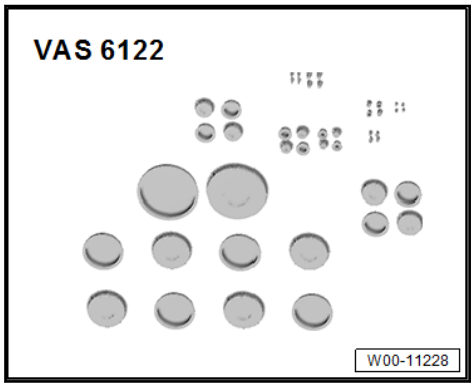
- Transmission Support - Bolt - 3282/34-



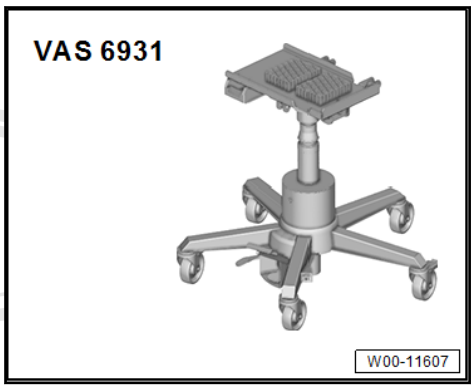
- Transmission Support - Mounting Plate 61 - 3282/61-



- Engine Bung Set - VAS6122-



- Engine and Gearbox Jack - VAS6931-



Procedure

- Pay attention to ⇒ “4 Repair Information”, page 6 .
- Pay attention to ⇒ “4.2 Guidelines for Clean Working Conditions”, page 7 .
- Refer to the information on the S tronic transmission 0DL. Refer to ⇒ “4.1 General Information”, page 6 .
- During installation, all cable ties must be installed at the same location.

– Move the selector lever into “P” position.

– Position the front wheels so they are in the straight-ahead position.

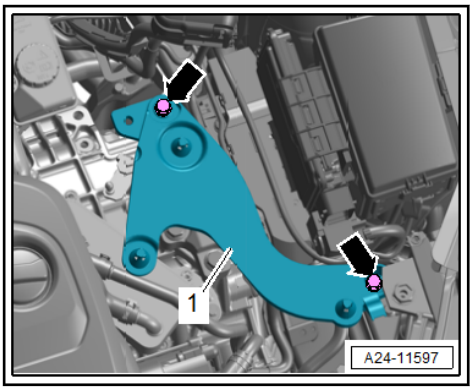
– Switch the ignition off.

– Remove the starter. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Starter; Starter, Removing and Installing .

– Remove the subframe and steering gear, while installing the Assembly Tool, Sub-frame Alignment - T10096A- . Refer to

⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Subframe; Subframe with Steering Gear, Removing and Installing .

– Remove the bevel box. Refer to ⇒ "6.1 Bevel Box, Removing", page 61 .
– Remove the left and right front wheel spoiler. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Wheel Housing Liner; Overview - Front Wheel Housing Liner .
– Remove the coolant pipes from the transmission. Refer to ⇒ Rep. Gr. 19 ; Coolant Pipes; Coolant Pipes, Removing and Installing .
– Free up the wiring harness.
– Remove the bolts -arrows- and remove the air filter housing bracket -1-.

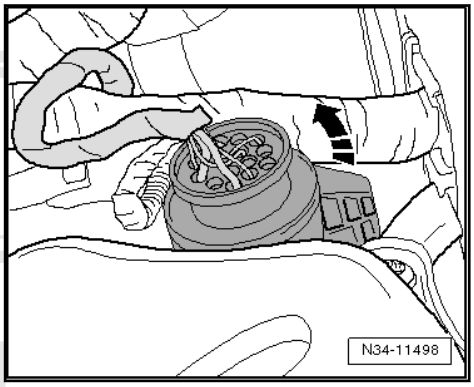


NOTICE

Risk of destroying due to electrostatic charge.

- **Do not touch the connector terminals.**
- **Touch a grounded object (for example the hoist) and discharge any static electricity.**

– Turn the screw counter-clockwise and disconnect the connector -arrow- from the transmission.

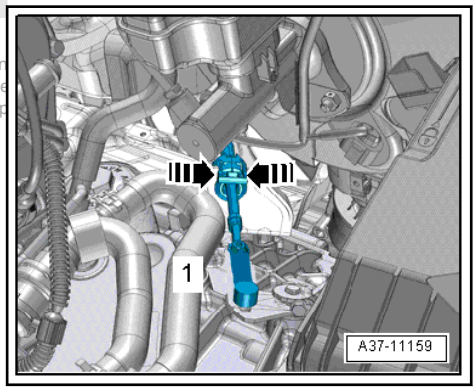


NOTICE

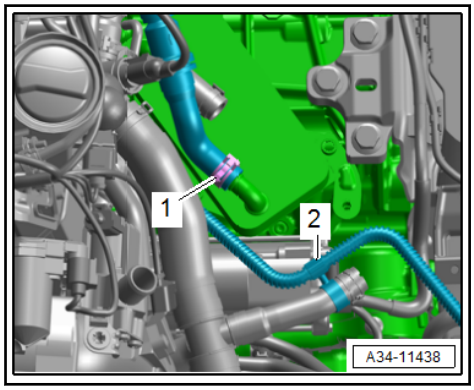
Risk of damaging the operating cable by deforming it.

- **Never bend the operating cable too sharply or kink it.**

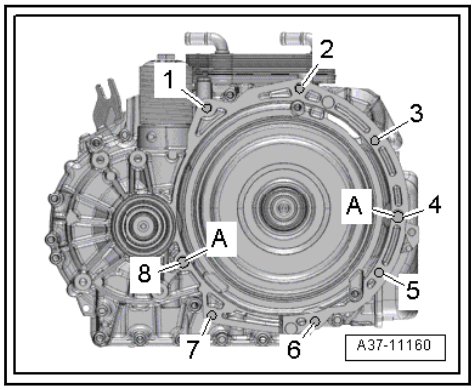
– Remove the ball socket -1- on the selector lever cable from the selector shaft lever using the Pry Lever - 80-200- .
– Release the catches in direction of -arrows- and free up the selector lever cable.



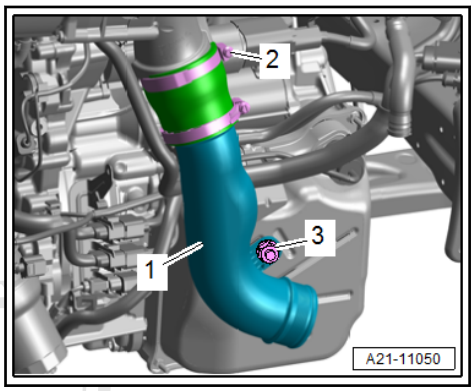
– Place a cloth on the transmission fluid cooler and transmission to absorb escaping coolant.
– Loosen the hose clamp -1- and remove the coolant hose from the transmission fluid cooler.
– Free up the bleeder hose -2-.
– Seal the open lines and connections with clean plugs from the Engine Bung Set - VAS6122- .
– Remove the transmission fluid filter (Refer to ⇒ “7.3 Transmission Fluid Filter, Removing and Installing”, page 69) and cover the opening with clean cloths.



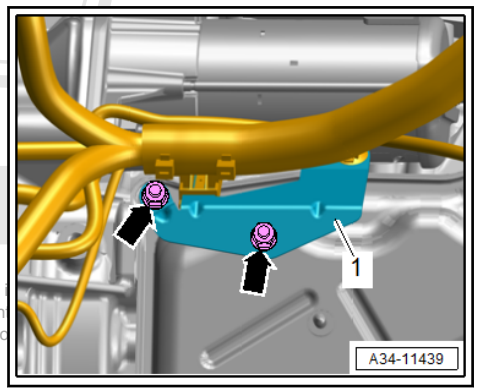
– Remove the bolts -1, 2 and 3- from the transmission/engine connection.
– Support the engine in the installation position. Refer to ⇒ Engine Mechanical; Rep. Gr. 10 ; Subframe Mount; Engine, Supporting in Installation Position .



– Loosen the clamp -2-.
– Remove the nut -3- and the air duct pipe -1-.

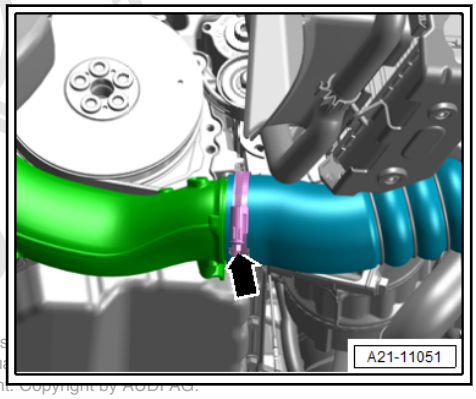


– Remove the bolts -arrows- and free up the bracket -1- with the wiring harness.



– Loosen the hose clamp -arrow- and remove the air duct pipe.

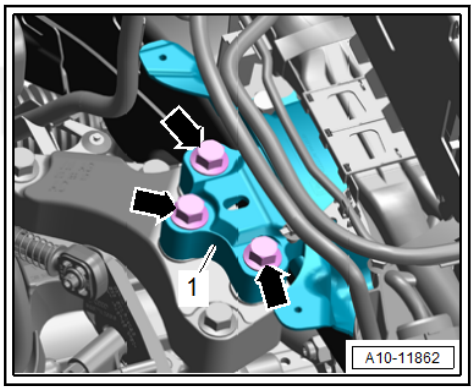
– Remove the left and right drive axle from the transmission and tie it up toward the rear. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Drive Axle; Drive Axle, Removing and Installing .



Note:

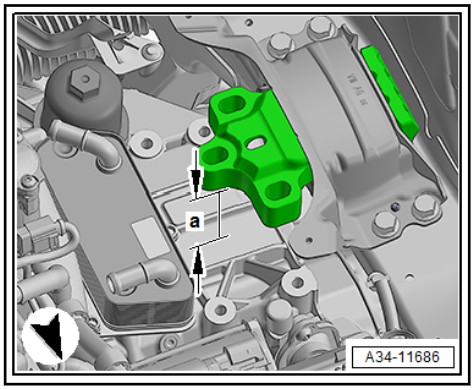
♦ Be careful not to damage the protective coating on the drive axle.

– Remove the bolts -arrows- for the transmission mount -1-.



– Lower the engine/transmission sub-assembly by the spindles on the Engine Support Bridge - 10-222A- until dimension -a- is reached between the transmission housing and the transmission mount.

• Dimension -a- = 50 mm (1.96 in.).



To remove the dual clutch transmission 0DL, configure the Transmission Support - 3282- with the Transmission Support - Mounting Plate 61 - 3282/61- and position on the Engine and Gearbox Jack - VAS6931- .

– Align the Transmission Support - 3282- arms so that they align with the holes in the Adjusting Plate .

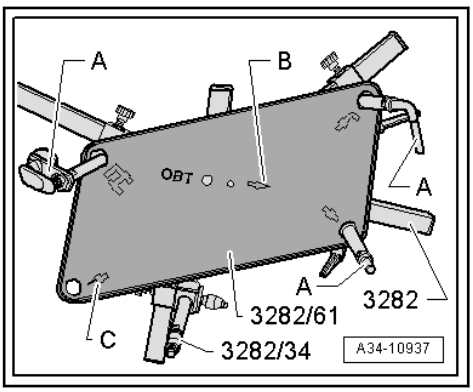
– Install the mounting elements -A- on the Adjustment Plate as shown. The Transmission Support - Bolt - 3282/34- is used as the right rear mounting element. This mounting element is located outside of the Adjusting Plate .

• The mounting element -C- on the Adjusting Plate is not used.

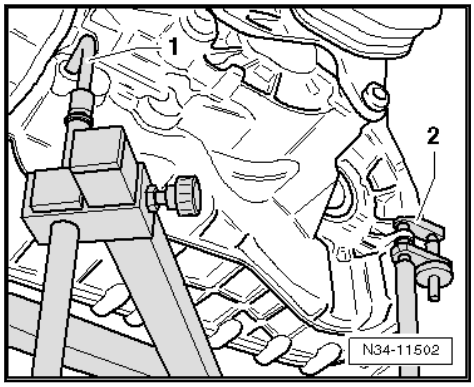
– Place the Engine and Gearbox Jack - VAS6931- under the vehicle.

• The arrow symbol -B- on the Mounting Plate points in direction of travel.

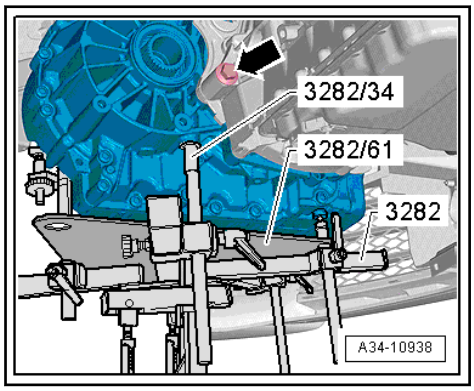
– Align the Transmission Support - 3282- so that it is parallel to the transmission.



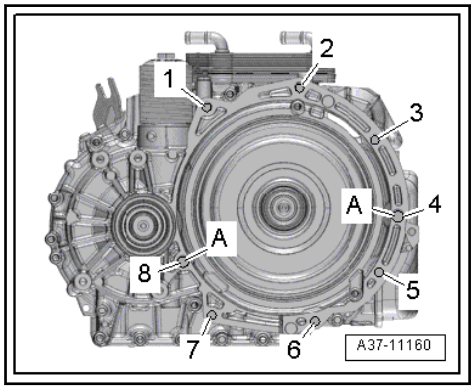
– Insert the hook -1- in the dual-clutch transmission mount.
– Secure the safety support -2- in the dual-clutch transmission mount.



– Install the Transmission Support - Bolt - 3282/34- in the transmission.
– Support the transmission from underneath using the Engine and Gearbox Jack - VAS6931- .



– Remove the bolts -4 through 8- that connect the transmission to the engine.
– Separate the transmission from the alignment sleeves on the engine.
– Carefully lower the transmission using the Engine and Gearbox Jack - VAS6931- . Be careful not to get any lines caught.
– When lowering, change the transmission position using the spindles on the Transmission Support - 3282- .



2.2 Transmission, Installing

Special tools and workshop equipment required

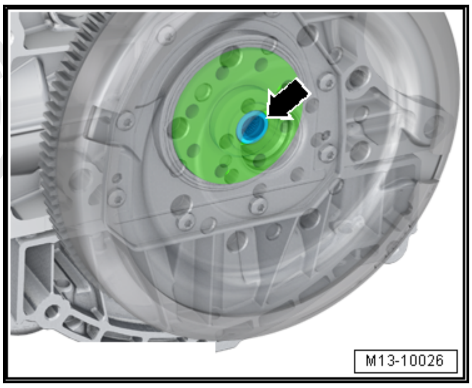
♦ High Temperature Grease - G 052 133 A2-

Procedure

♦ Refer to the “Transmission, Removing” procedure for a list of the special tools needed. Refer to ⇒ “2.1 Transmission, Removing”, page 45 .
♦ Replace bolts that were tightened with an additional turn after removing them.
♦ Replace self-locking nuts and bolts as well as O-rings, seals and gaskets after removal.
♦ Secure all hose connections with hose clamps corresponding to series production. Refer to the ⇒ Electronic Parts Catalog (ETKA) .
♦ During installation, all cable ties must be installed at the same location.

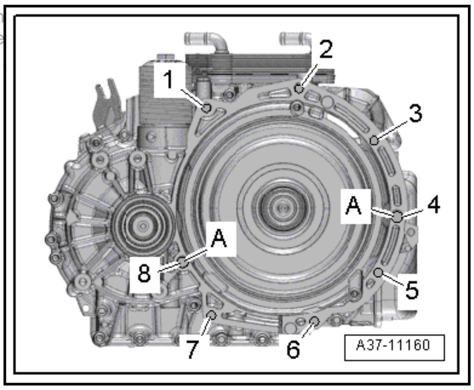
Install in the reverse order of removal while noting the following:

♦ Tightening specifications. Refer to ⇒ “2.3 Transmission Tightening Specifications”, page 54 .



– Replace the needle bearing -arrow- in the engine crankshaft. Refer to ⇒ Rep. Gr. 13 ; Crankshaft; Needle Bearing in Crankshaft, Replacing .

– Transmission pins (not splines) must also be lightly lubricated.



– Check if the alignment sleeves -A- for centering the engine/transmission are in the cylinder block and insert them if they are not.

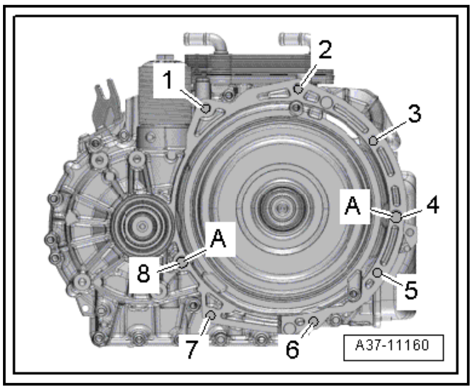
• The missing alignment sleeves due to an offset from the engine and transmission lead to damage to the needle bearing in the crankshaft.

– Carefully lift the transmission using the Engine and Gearbox Jack - VAS6931- and bring it to its installation position using the Transmission Support - 3282- .

– Insert the transmission without pinching any lines.

• Engine and transmission must be brought together by hand until both flanges contact all around!

• If this is not the case, adjust the transmission support until the engine and transmission align.



– Attach the transmission to the engine.

• The bolt -3- is only accessible via the opening for the removed starter.

– Remove the Transmission Support - 3282- from the transmission.

– Lift the engine/transmission assembly using the spindles on the Engine Support Bridge - 10-222A- .

– Align the engine/transmission assembly in its installation position. To do so, lift it until the transmission is completely flat on the transmission mount.

Tip:

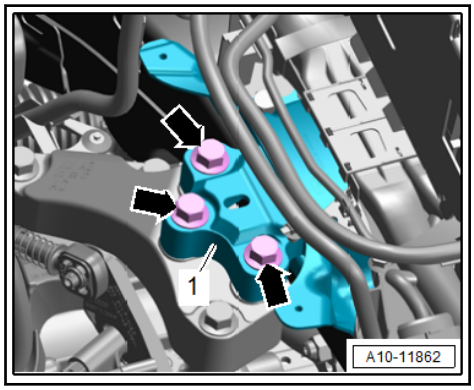
- ♦ Before installing the bolts -arrows- the transmission and transmission mount must be parallel to each other. If necessary, lift the transmission using the Engine and Gearbox Jack - VAS6931- .

– Install the bolts -arrows- for the transmission mount -1- next only hand-tight.

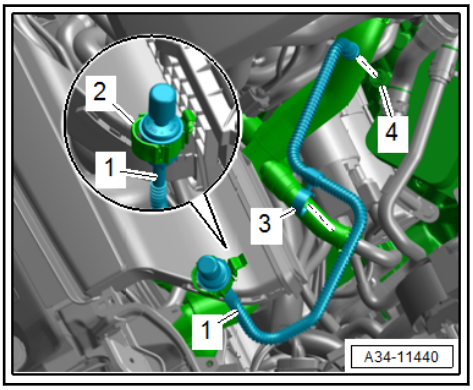
– Check the subframe mount adjustment. Adjust if necessary. Refer to ⇒ Rep. Gr. 10 ; Assembly Mounts; Assembly Mount, Adjusting .

– Tighten the subframe mount.

- Remove Engine Support Bridge - 10-222A- only when all subframe mount bolts are tightened to the specified torque and the subframe is installed.



Vehicles with Vent Pipe on the Transmission Ventilation Hose:



- If the transmission was replaced: remove the cap -4- and place the vent pipe -1- on the transmission ventilation.
- Secure the vent pipe with the clips -2 and 3-.

All Vehicles:

- Install the drive axles. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Drive Axle; Drive Axle, Removing and Installing .
- Remove the Engine Support Bridge - 10-222A- from the engine.
- Install the transmission fluid filter. Refer to ⇒ “7.3 Transmission Fluid Filter, Removing and Installing”, page 69 .
- Install the air duct pipes and air duct hoses. Refer to ⇒ Rep. Gr. 21 ; Charge Air System; Overview - Charge Air System .
- Install the selector lever cable on the dual-clutch transmission. Refer to ⇒ “1.6 Shift Mechanism, Removing and Installing”, page 38 .
- Adjust the selector lever cable. Refer to ⇒ “1.8 Selector Lever Cable, Checking and Adjusting”, page 43 .
- Install the coolant pipes on the transmission. Refer to ⇒ Rep. Gr. 19 ; Coolant Pipes; Coolant Pipes, Removing and Installing .
- Install the left front wheel spoiler. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Wheel Housing Liner; Overview - Front Wheel Housing Liner .
- Install the bevel box. Refer to ⇒ “6.2 Bevel Box, Installing”, page 64 .
- Install the subframe. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Subframe; Subframe and Steering Gear, Removing and Installing .
- Remove the Engine Support Bridge - 10-222A- .
- Install the starter. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Starter; Starter, Removing and Installing .
- Connections and routing. Refer to ⇒ Wiring diagrams, Troubleshooting & Component locations.
- Check the transmission fluid level land fill. Refer to ⇒ “9.2 Transmission Fluid Level, Checking”, page 78 .

If the Transmission is Replaced, the “Replace Control Module” Function must be Performed Using the ⇒ Vehicle diagnostic tester.

- Select `Individual test` on the ⇒ Vehicle diagnostic tester.

♦ Dual clutch transmission ODL

♦ 01 - OBD-capable systems

♦ 02 - Transmission electronics

♦ 02 - Transmission electronic functions

♦ 02 - Mechatronic, replacing

2.3 Transmission Tightening Specifications

⇒ “2.3.1 Transmission Tightening Specifications, RS3 through PA”, page 54

⇒ “2.3.2 Transmission Tightening Specifications, RS3 from PA and TT RS”, page 54

⇒ “2.3.3 Transmission Tightening Specifications, Q3”, page 55

2.3.1 Transmission Tightening Specifications, RS3 through PA

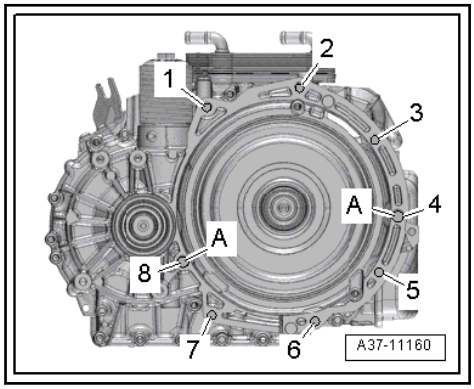
- The tightening specifications apply only to lightly greased, oiled, phosphated or blackened nuts and bolts.
- Additional lubricants, such as engine oil or transmission fluid are permitted, but lubricants containing graphite are not.
- Do not use any ungreased parts.
- Tightening specification tolerance: ± 15%.

Assembly Mounts. Refer to ⇒ “5.1 Overview - Assembly Mounts”, page 60 .

RS3 Through PA:

Item	Bolt	Nm
1	M12x65	80
2, 3 and 4	M12 x 70	80
5, 6 and 7	M10 x 60	40
8 1)	M12 x 95	80
A	Alignment sleeves for centering	

• 1) Installed into the transmission from the engine side.



2.3.2 Transmission Tightening Specifications, RS3 from PA and TT RS

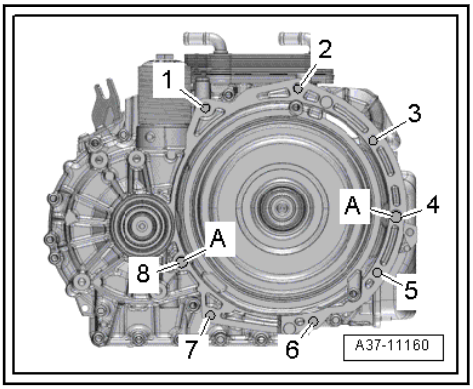
- The tightening specifications apply only to lightly greased, oiled, phosphated or blackened nuts and bolts.
- Additional lubricants, such as engine oil or transmission fluid are permitted, but lubricants containing graphite are not.
- Do not use any ungreased parts.
- Tightening specification tolerance: ± 15%.

Assembly mounts. Refer to ⇒ “5.1 Overview - Assembly Mounts”, page 60 .

RS3 PA and TT RS:

Item	Bolt	Nm
1	M12 x 60	80
2, 3 and 4	M12 x 75	80
5, 6 and 7	M10x60 Aluminum 2	15 Nm + 90°
8 1)	M12 x 95	80
A	Alignment sleeves for centering	

- 1) Installed into the transmission from the engine side.
- 2) bolts may be used two times. Refer to ⇒ page 55 .

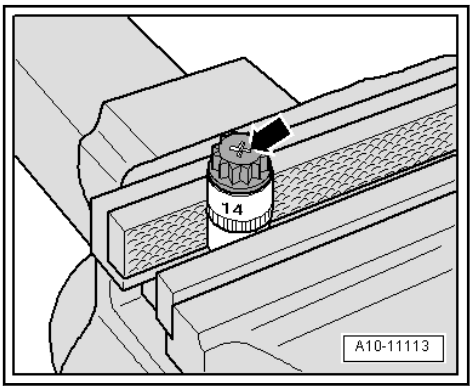


Aluminum Bolts, Reusing

The aluminum bolts may be used two times. Therefore, the bolts must be marked with two notches “X” made by a chisel after they have been used the first time -arrow-.

To prevent damaging the bolts when marking them, do not clamp them in a vise. Insert the bolt in a 14 mm socket with a $^1/_2$ drive, which is inserted in to the vise, as shown.

Bolts marked with an “X” may not be used again.



2.3.3 Transmission Tightening Specifications, Q3

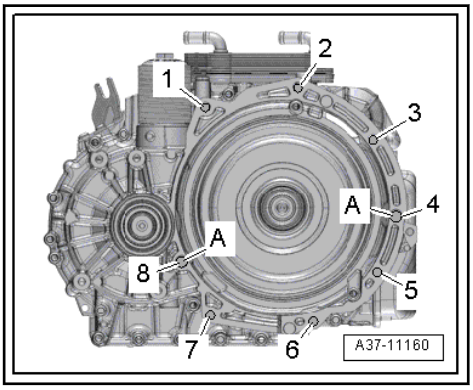
- The tightening specifications apply only to lightly greased, oiled, phosphated or blackened nuts and bolts.
- Additional lubricants, such as engine oil or transmission fluid are permitted, but lubricants containing graphite are not.
- Do not use any ungreased parts.
- Tightening specification tolerance: ± 15%.

Assembly mounts. Refer to ⇒ “5.1 Overview - Assembly Mounts”, page 60 .

Tightening specifications 2.0L TFSI / 2.0L TDI:

Item	Bolt	Nm
1 and 2	M12 x 50	80
3 and 4	M12 x 60	80
5, 6 and 7	M10x50	40
8 1)	M12 x 70	80
A	Alignment sleeves for centering	

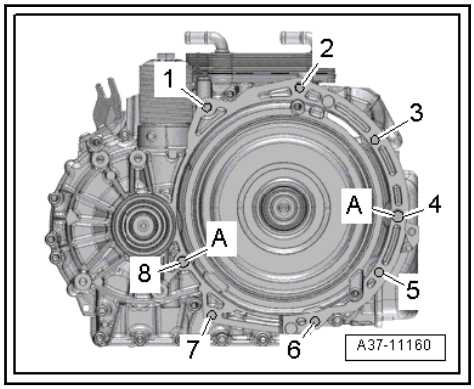
- 1) Installed into the transmission from the engine side.



Tightening Specifications 3.8L TFSI:

Item	Bolt	Nm
1	M12 x 60	80
2, 3 and 4	M12 x 75	80
5, 6 and 7	M10x60 Aluminum 2	15 Nm + 90°
8 1)	M12 x 95	80
A	Alignment sleeves for centering	

- 1) Installed into the transmission from the engine side.
- 2) bolts may be used two times. Refer to ⇒ page 56 .

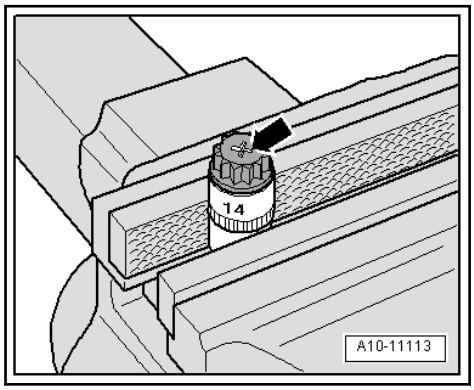


Aluminum Bolts, Reusing

The aluminum bolts may be used two times. Therefore, the bolts must be marked with two notches “X” made by a chisel after they have be used the first time -arrow-.

To prevent damaging the bolts when marking them, do not clamp them in a vise. Insert the bolt in a 14 mm socket with a $^{1}/_{2}$ drive, which is inserted in to the vise, as shown.

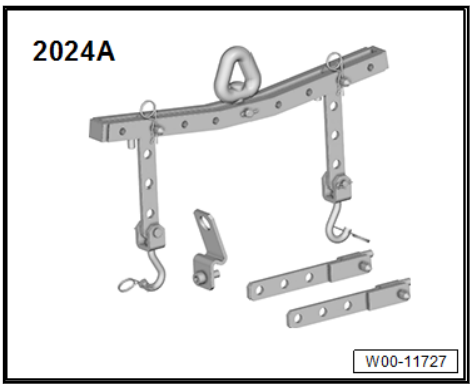
Bolts marked with an “X” may not be used again.



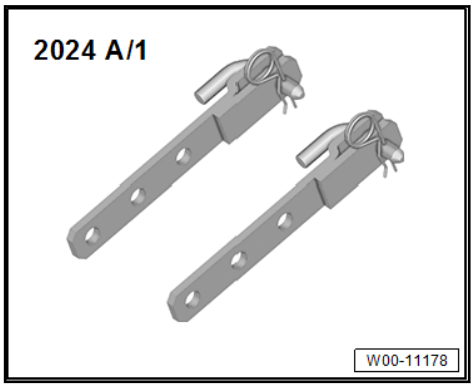
3 Transmission, Transporting

Special tools and workshop equipment required

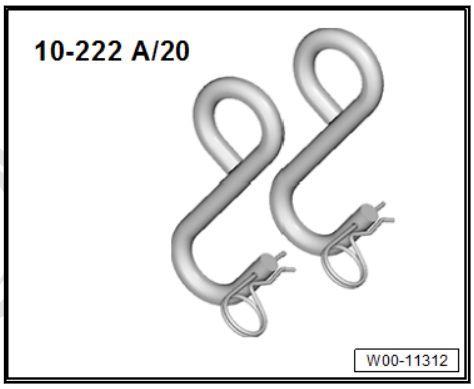
- Engine Sling - 2024A-



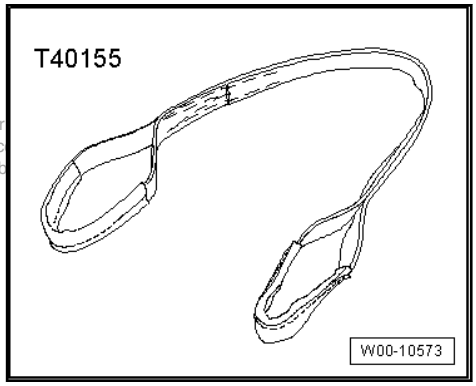
- Engine Sling - Engine Bracket - 2024/1-



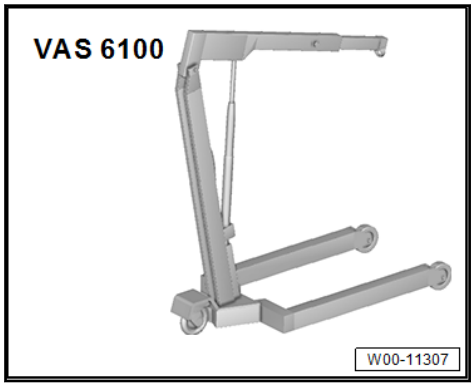
- Engine Support Bridge - Special Hook - 10-222A/20-



- Quantity: two, Holding Strap - T40155A-



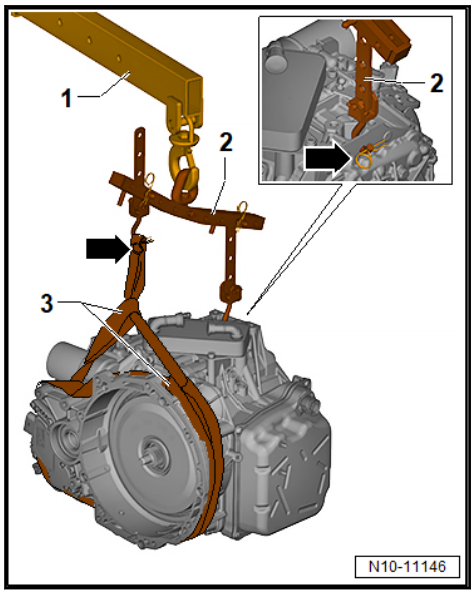
- Shop Crane - VAS6100-



Procedure

– Position the Holding Strap - T40155A- (quantity: 2) as shown around the transmission.

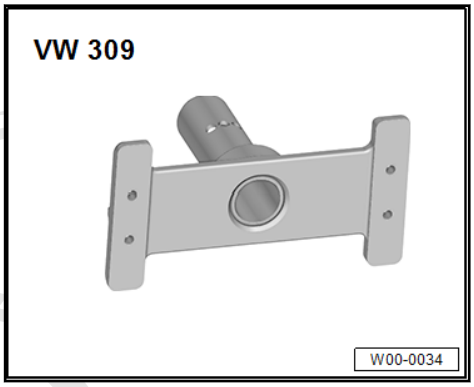
– Engage the Shop Crane - VAS6100- with the Engine Sling - 2024A- -arrows-.



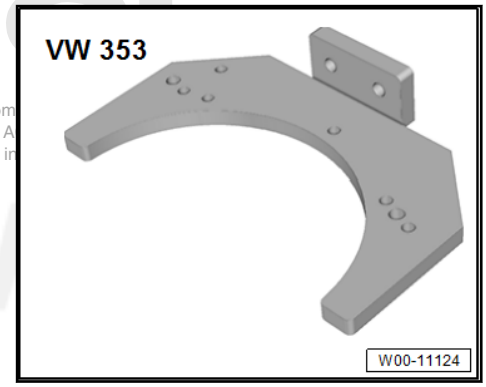
4 Securing on Engine and Transmission Holder

Special tools and workshop equipment required

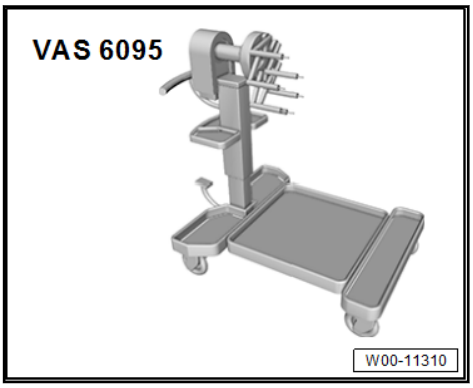
- Holding Plate - VW309A-



- Transmission Support - VW353-



- Engine and Gearbox Bracket - VAS6095A-

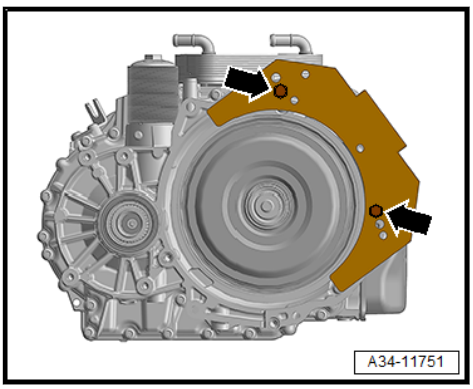


Transmission, Securing to Engine/Transmission Holder

– Mount the transmission to the Transmission Support - VW353- and place it, with the Holding Plate - VW309- in the Engine and Gearbox Bracket VAS6095A - VAS6095- .

Tip:

- Vents for the transmission housing must be closed when turning a filled transmission on the engine and transmission holder with the bleeder downward.



5 Assembly Mounts

⇒ “5.1 Overview - Assembly Mounts”, page 60

5.1 Overview - Assembly Mounts

1– 6 - Engine Mount

- ❑ Refer to ⇒ Engine Mechanical; Rep. Gr. 10 ; Assembly Mounts; Overview - Assembly Mounts

7 - Bolt

- ❑ 60 Nm +90°
- ❑ Replace after removing

8 - Pendulum Support

- ❑ Removing and Installing. Refer to ⇒ Engine Mechanical; Rep. Gr. 10 ; Assembly Mounts; Pendulum Support, Removing and Installing .

9 - Bolt

- ❑ 130 Nm +90°
- ❑ Replace after removing

10 - Bolt

- ❑ 60 Nm +90°
- ❑ Replace after removing

11 - Bolt to Transmission

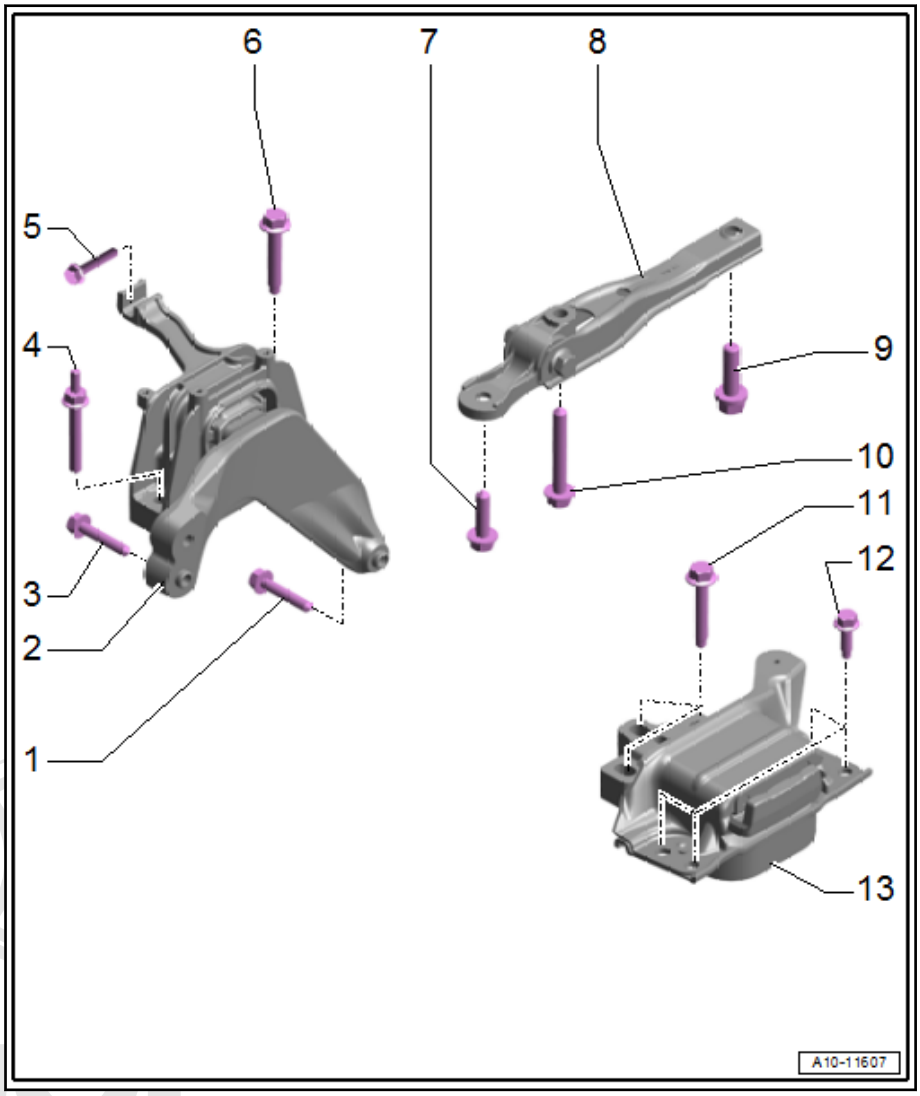
- ❑ 60 Nm +90°
- ❑ Replace after removing

12 - Bolt to Longitudinal Member

- ❑ 50 Nm +90°
- ❑ Replace after removing

13 - Transmission Mount

- ❑ Removing and Installing. Refer to ⇒ Engine Mechanical; Rep. Gr. 10 ; Assembly Mounts; Transmission Mount, Removing and Installing .

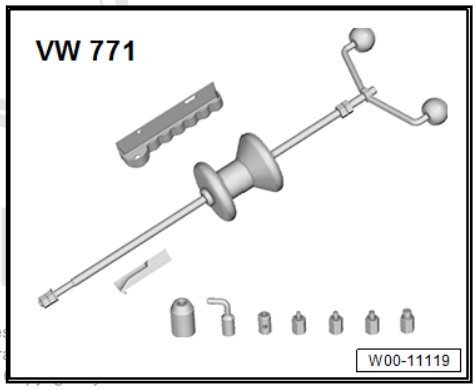


6 Bevel Box

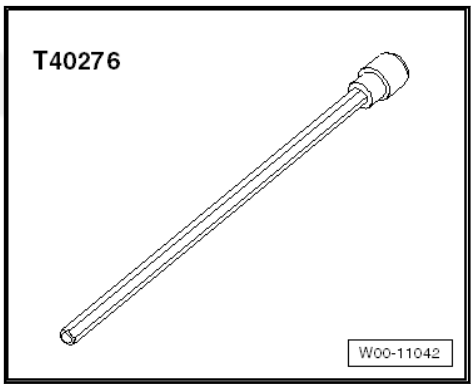
6.1 Bevel Box, Removing

Special tools and workshop equipment required

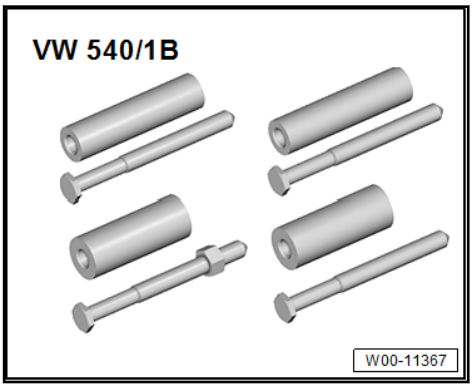
- Slide Hammer Set - VW771-



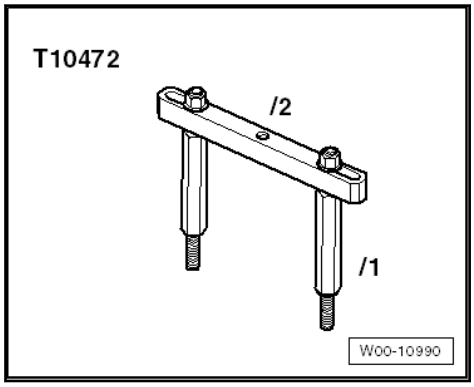
- Socket - 8mm - T40276-



- Holding Fixture - Spacers - VW540/1B-



- Puller - Bevel Gear - T10472-



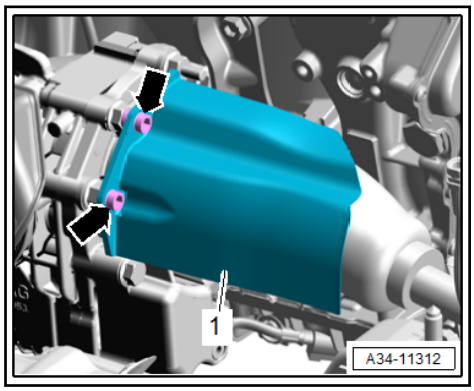
Removing

– Remove the subframe and steering gear, while installing the Assembly Tool, Sub-frame Alignment - T10096A- . Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Subframe; Subframe with Steering Gear, Removing and Installing .

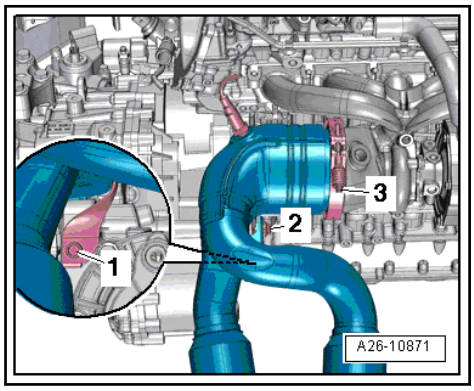
– Remove the driveshaft. Refer to ⇒ Rear Final Drive; Rep. Gr. 39 ; Driveshaft; Driveshaft, Removing and Installing .

– Remove the nuts -arrows- and remove the right drive axle heat shield.

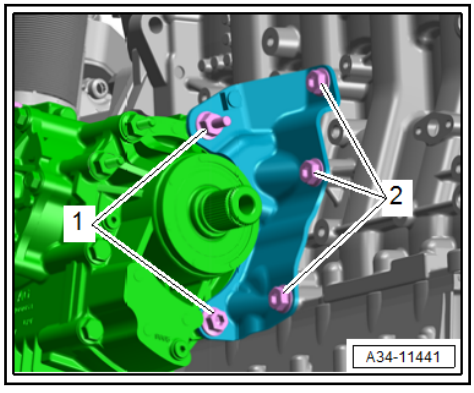
– Remove the right drive axle from the bevel box and tie it up toward the rear. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Drive Axle, Drive Axle, Removing and Installing .



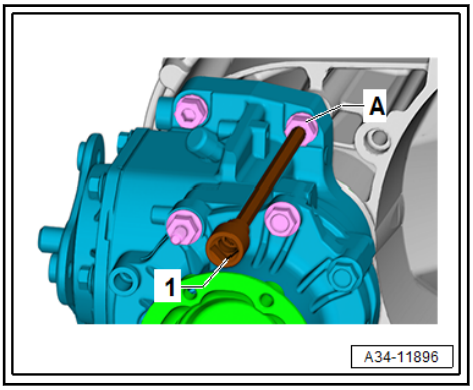
– Remove the bolts -1 and 2- and the pre-catalytic converter bracket.



– Remove the bolts -1 and 2- and remove the bevel box bracket.

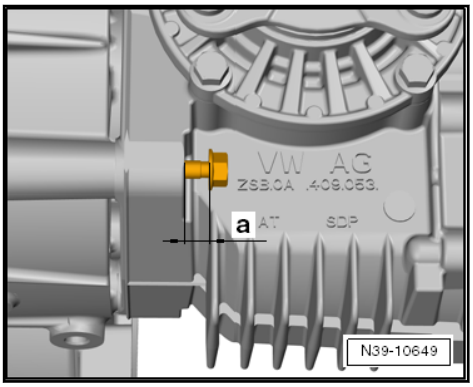


– Remove the upper bolts -A- for the bevel box retainer at the transmission using the Socket - 8mm - T40276- .

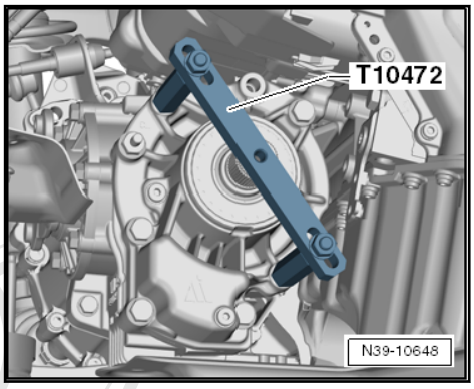


– Only loosen the lower bolts for securing the bevel box on the transmission and remove up to dimension -a-.

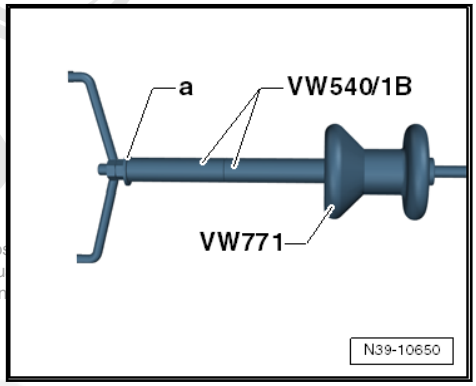
- Dimension -a- = 15 mm (0.59 in.).
- This prevents the transmission from falling when loosening with the Slide Hammer Set - VW771- .



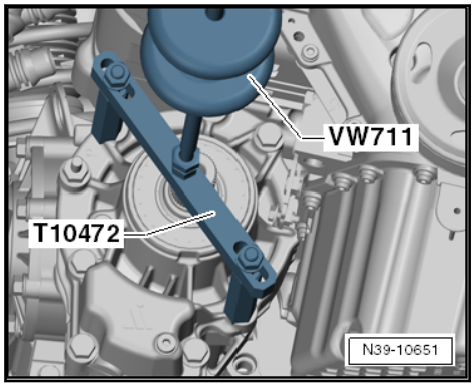
– Install the Puller - Bevel Gear - T10472- on the bevel box as shown.



– Prepare the Slide Hammer Set - VW771- with a washer -a- and two sleeves from the Holding Fixture - Spacers - VW540/1B- as shown.



– Fasten the Slide Hammer Set - VW771- to the Puller - Bevel Gear - T10472- and detach the bevel box to the transmission.
– Remove the slide hammer and puller.
– Remove the lower bolts and remove the bevel box.



6.2 Bevel Box, Installing

Special tools and workshop equipment required

♦ Refer to the ⇒ Electronic Parts Catalog (ETKA) for the grease for clutch plate splines.

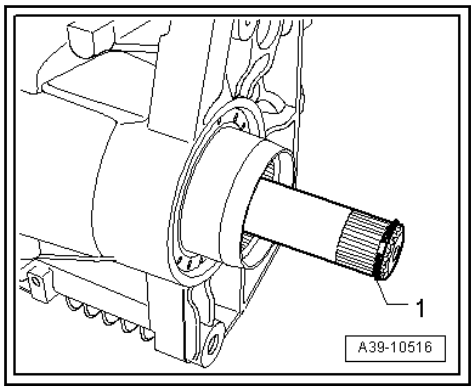
Installing

Install in the reverse order of removal while noting the following:

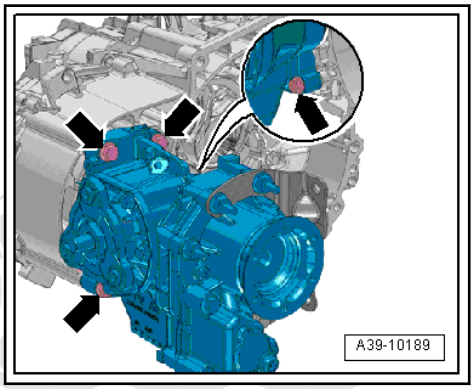
♦ Tightening specifications. Refer to ⇒ “6.3 Bevel Box, Tightening Specification”, page 65 .
– Grease the splines on the bevel box.
– Install a new circlip -1- on the stub shaft.

Tip:

♦ Hit the interlocked pin on the front side with a plastic mallet, so that the stub shaft circlip engages correctly into the differential bevel gear.
♦ Do not pull the bevel box forcefully against the transmission by rotating the bolts.
– Insert the bevel box and press it all the way on the transmission.
• If the tooth position is incorrect (the bevel box cannot be pressed against the transmission), rotate at the stub shaft.
– If the tooth position is correct and it is guided centered, the bevel box slides against the transmission all the way.
– Tighten the bevel box. Refer to ⇒ Fig. ““Bevel Box on Dual-Clutch Transmission - Tightening Specification”“ , page 65 .
– Install the driveshaft. Refer to ⇒ Rear Final Drive; Rep. Gr. 39 ; Driveshaft; Driveshaft, Removing and Installing .
– Install the drive axle. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Drive Axle; Overview - Drive Axle .
– Install the drive axle heat shield. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Drive Axle; Drive Axle Heat Shield, Removing and Installing .
– Install the subframe with the steering gear. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Subframe; Subframe with Steering Gear, Removing and Installing .
– Check the gear oil level in bevel box. Refer to ⇒ “3.1 Gear Oil, Checking Level”, page 98 .



6.3 Bevel Box, Tightening Specification



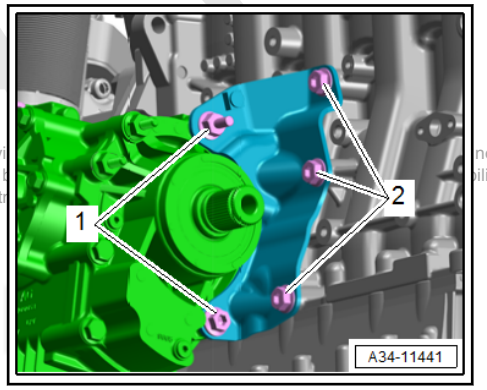
Bevel Box on Dual-Clutch Transmission - Tightening Specification

- Replace the bolts after removing them.

– Tighten the bolts in steps as follows:

Step	Bolts	Tightening Specification/Additional Turn
1.	-arrows-	Install all the way by hand
2.	-arrows-	40 Nm diagonally
3.	-arrows-	90° additional turn, diagonally

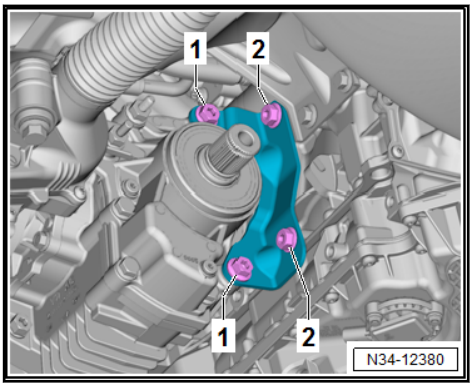
Bevel Box Bracket - 2.5L TFSI



– Tighten the bolts in steps as follows:

Step	Bolts	Tightening Specification
1.	-1 and 2-	Install all the way by hand
2.	-2-	8 Nm
3.	-1-	8 Nm
4.	-2-	40 Nm
5.	-1-	40 Nm

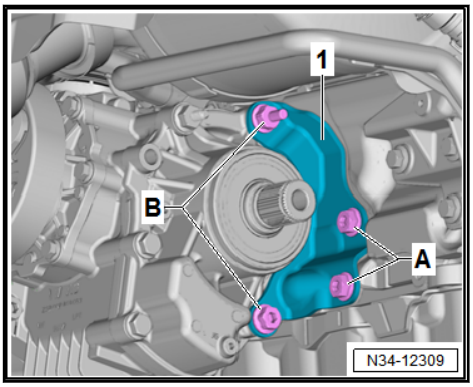
Bevel box bracket - 2.0L TFSI



– Tighten the bolts in steps as follows:

Step	Bolts	Tightening Specification
1.	-1 and 2-	Install all the way by hand
2.	-2-	8 Nm
3.	-1-	8 Nm
4.	-2-	40 Nm
5.	-1-	40 Nm

Bevel Box Bracket - 2.0L TDI



– Tighten the bolts in steps as follows:

Step	Bolts	Tightening Specification
1.	-B, A-	Install all the way by hand
2.	-A-	8 Nm
3.	-B-	8 Nm
4.	-A-	40 Nm
5.	-B-	40 Nm

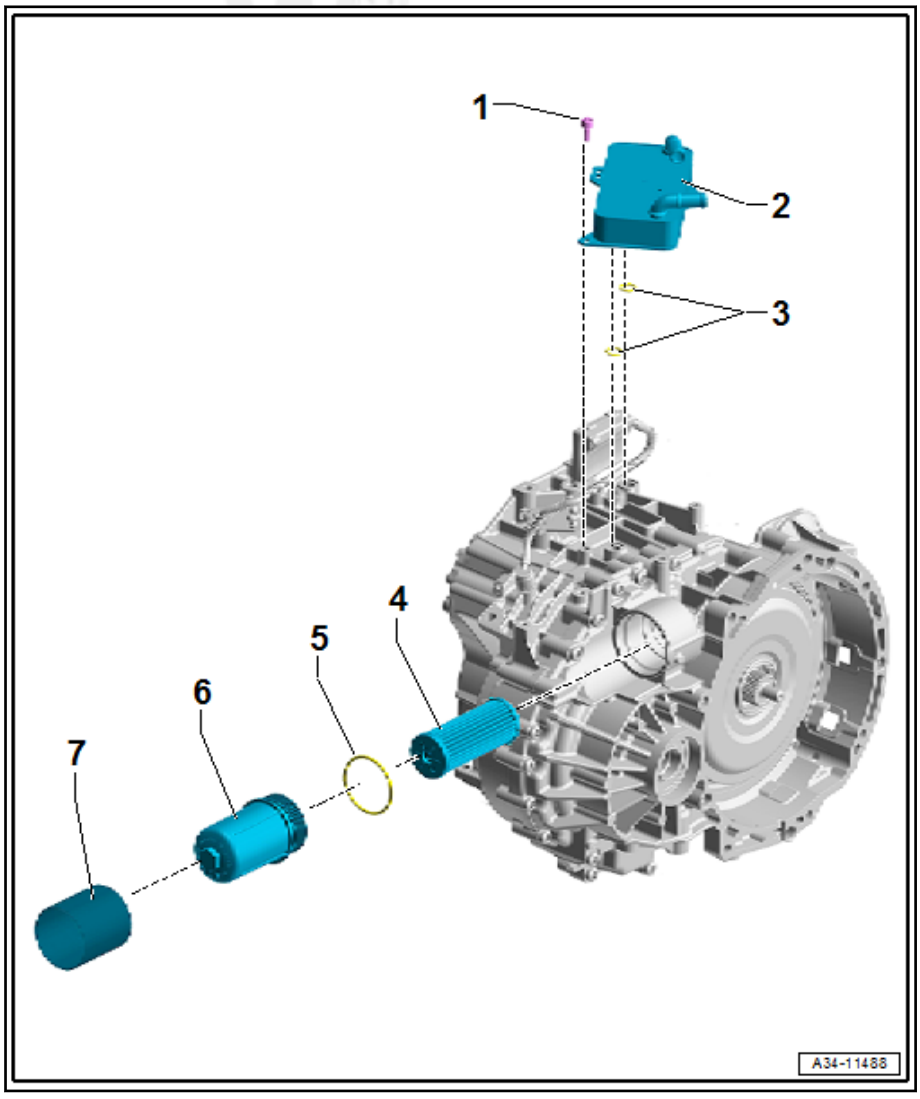
Additional Tightening Specifications

♦ Refer to ⇒ Rep. Gr. 26 ; Emissions Control System; Overview - Emissions Control System .

7 Transmission Fluid Circuit

7.1 Overview - Transmission Fluid Circuit

Image is similar. The transmission fluid filter is installed vertically on the ODL transmission.



1 - Bolt

- ❑ 15 Nm + 60°
- ❑ Always replace

2 - Transmission Fluid Cooler

- ❑ Removing and Installing. Refer to ⇒ “7.2 Transmission Fluid Cooler, Removing and Installing”, page 66 .

3 - O-Rings

- ❑ Replace after removing
- ❑ Coat with transmission fluid before inserting to prevent the rings from being crushed during assembly.

4 - Transmission Fluid Filter

- ❑ Notes for oil change and filter replacement. Refer to ⇒ “4.1 General Information”, page 6 .
- ❑ Removing and Installing. Refer to ⇒ “7.3 Transmission Fluid Filter, Removing and Installing”, page 69 .

5 - O-Ring

- ❑ Replace after removing
- ❑ Coat with transmission fluid to insert

6 - Filter Housing

- ❑ 50 Nm

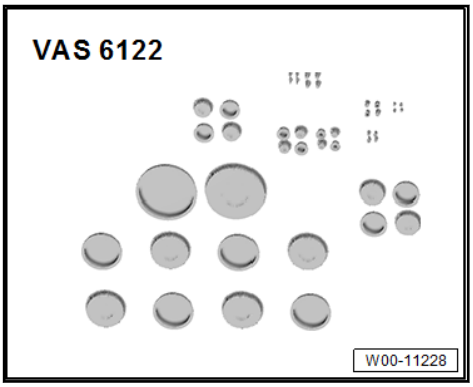
7 - Heat Shield

7.2 Transmission Fluid Cooler, Removing and Installing

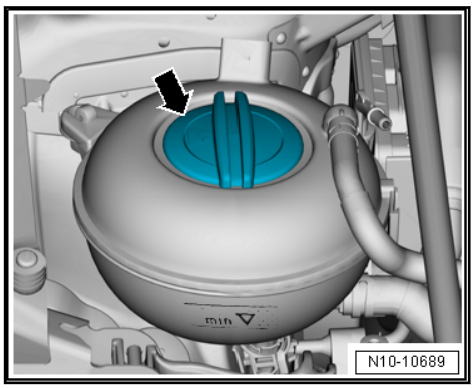
Special tools and workshop equipment required

- Hose Clamps - Up To 25 mm - 3094-

- Engine Bung Set - VAS 6122-



Removing



There is a risk of burns from hot coolant.

The cooling system may be under pressure. Risk of scalding due to hot steam and hot coolant.

– Wear safety gloves.

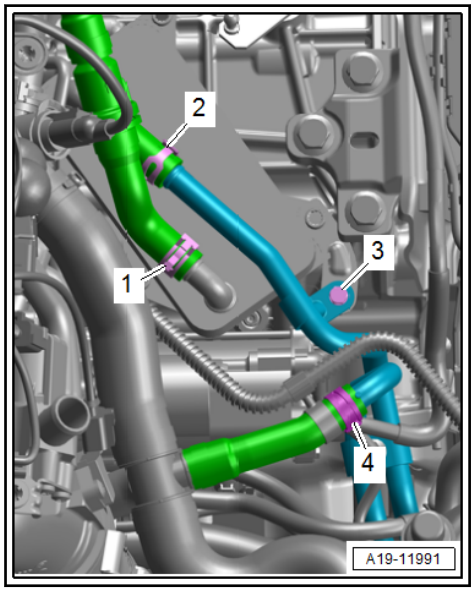
– Wear protective eyewear.

– Reduce the pressure: cover the coolant reservoir cap with a suitable towel and carefully open.

– Open the coolant expansion tank cap -arrow-.

– Remove the air filter housing. Refer to ⇒ Engine Mechanical; Rep. Gr. 24 ; Air Filter; Air Filter Housing, Removing and Installing .

– Place a cloth on the transmission fluid cooler and transmission to absorb escaping coolant.
– Clamp the coolant hose -4- with the Hose Clamps - Up To 25mm -3094- .
– Loosen the hose clamp -1- and then disconnect and remove the coolant hose with Hose Clamps - Up To 25mm -3094- .
– Remove the bolt -3- and loosen the hose clamp -2-.

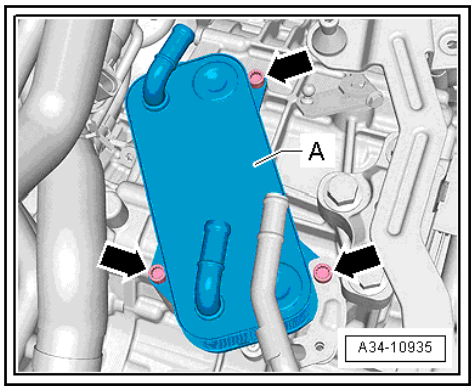


NOTICE

Transmission damage due to contaminated transmission fluid.

– Coolant must not drip into the transmission.

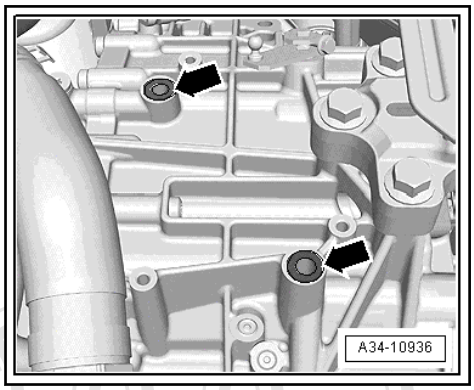
– Remove the bolts -arrows- and remove the transmission fluid cooler -A- from the coolant hose.



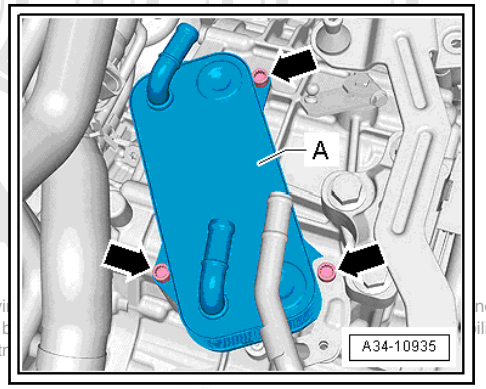
Installing

Install in the reverse order of removal while noting the following:

- Replace the O-rings -arrows- after removal.
- If there is damage to the sealing surface of the transmission fluid cooler it must be replaced.



– Carefully position the transmission fluid cooler -A-. At the same time pay attention to the sealing surface and the O-rings.
– Check the transmission fluid level land fill. Refer to ⇒ “9.2 Transmission Fluid Level, Checking”, page 78 .
– Fill with coolant. Refer to ⇒ Rep. Gr. 19 ; Cooling System/Coolant; Coolant, Draining and Filling .



Tightening Specifications

- Refer to ⇒ “7.1 Overview - Transmission Fluid Circuit”, page 66
- Refer to ⇒ Engine Mechanical; Rep. Gr. 24 ; Air Filter; Overview - Air Filter Housing .

7.3 Transmission Fluid Filter, Removing and Installing

- The transmission fluid filter usually does not need to be replaced.
- Change the transmission fluid filter “yes or no”. Refer to ⇒ “4.1 General Information”, page 6 .

Special tools and workshop equipment required

- Used Oil Collection and Extraction Unit - SMN372500-

Removing

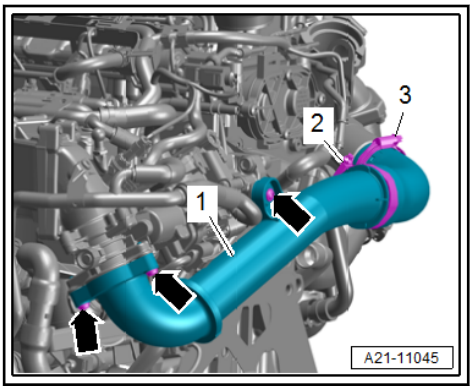
– Remove the air filter housing. Refer to ⇒ Engine; Rep. Gr. 24 ; Air Filter; Air Filter Housing, Removing and Installing (TFSI) or ⇒ Engine; Rep. Gr. 23 ; Air Filter; Air Filter Housing, Removing and Installing (TDI).

– Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Noise Insulation, Removing and Installing .

Vehicles with TDI engines

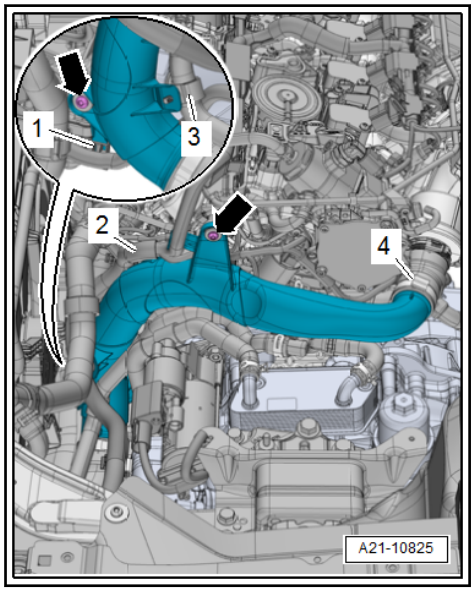
– Remove screws -arrows- using the socket XZN 10 - T10501- .

– Loosen the clamp -2-, and remove the air guide pipe -1-.



Vehicles with a 2.0 TFSI engine

– Free up the wiring harnesses -1 and 2- on the air duct pipe and transmission.
– Loosen the screw-type clamp -4-.
– Remove the bolts -arrows- and push the air duct pipe slightly to the left.



Continuation for all vehicles

– Place the Used Oil Collection and Extraction Unit - SMN372500- under the transmission.

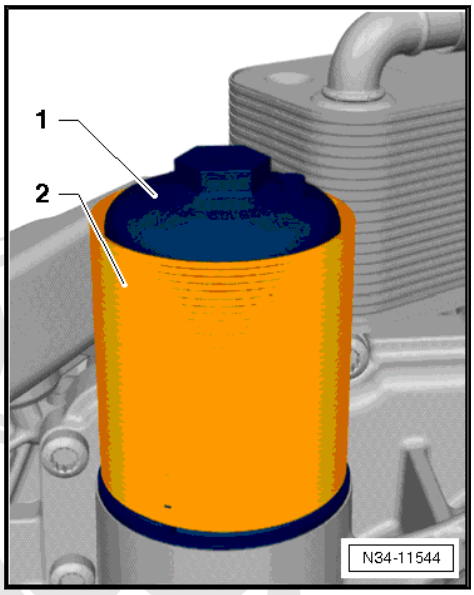
Tip:

- A residual amount of transmission fluid remains in the filter. This will drain out when removing the filter housing.
- Cover the area around the transmission fluid filter with some cloths before removing the filter housing.
- Thoroughly clean any lubricated areas on the transmission.

– Loosen the filter housing -1- approximately seven turns.
– Wait approximately 10 seconds.

This allows the fluid to flow from the filter housing back into the transmission.

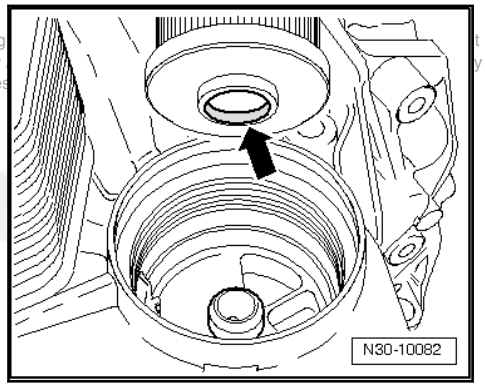
– Loosen the filter housing -1- and remove.
– Replace a missing or damaged heat shield -2-.



Installing

Install in the reverse order of removal while noting the following:

– Install the transmission fluid filter with the collar -arrow- downward.
– Install and tighten the filter housing.
– Fill the transmission fluid. Refer to ⇒ “9.2 Transmission Fluid Level, Checking”, page 78 .

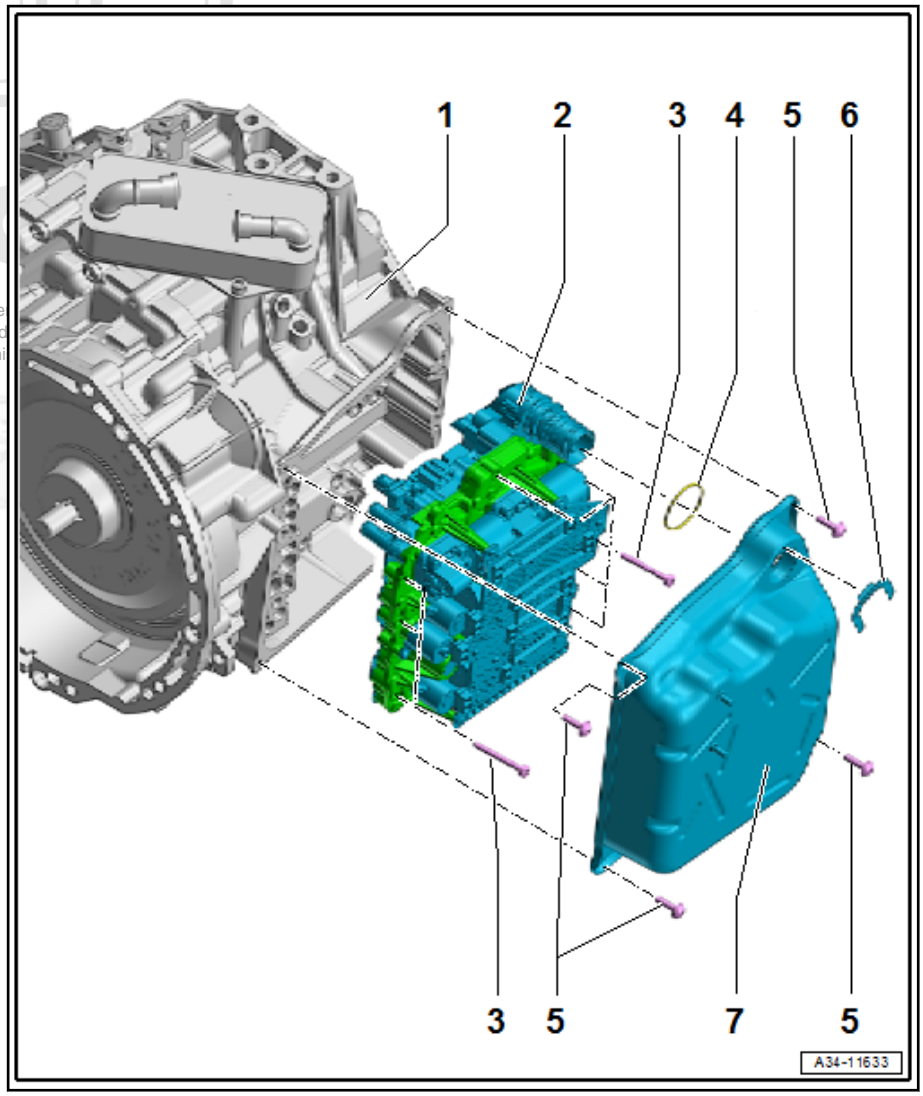


Tightening Specifications

- Refer to ⇒ “7.1 Overview - Transmission Fluid Circuit”, page 66
- Refer to ⇒ Engine Mechanical; Rep. Gr. 24 ; Air Filter; Overview - Air Filter Housing .
- Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .

8 Mechatronic

8.1 Overview - Mechatronic



1 - Transmission

2 - Dual-Clutch Transmission Mechatronic - J743-

- ❑ Removing and Installing. Refer to ⇒ “8.3 Mechatronic, Removing and Installing”, page 75 .

3 - Bolt

- ❑ Tightening sequence. Refer to ⇒ Fig. “Dual-Clutch Transmission Mechatronic -J743- - Tightening Specification and Sequence”“ , page 72 .
- ❑ Always replace

4 - Seal

- ❑ Always replace

5 - Bolt

- ❑ 8 Nm + 60°
- ❑ Always replace

6 - Clip

- ❑ Always replace

7 - Transmission Fluid Pan

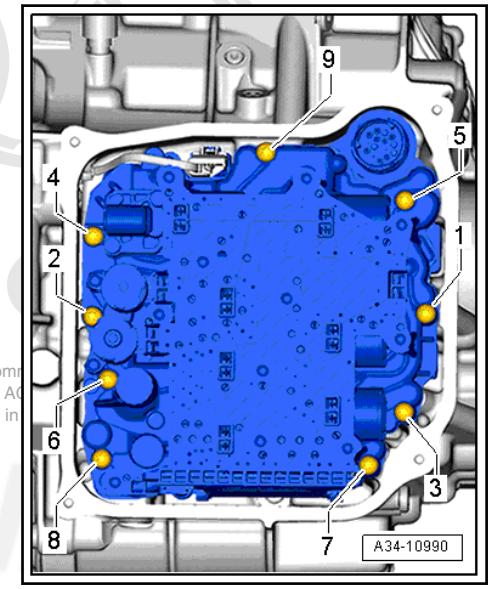
- ❑ Removing and Installing. Refer to ⇒ “8.2 Transmission Fluid Pan, Removing and Installing”, page 72 .
- ❑ Replace after removing

Dual-Clutch Transmission Mechatronic - J743- - Tightening Specification and Sequence

- Replace the bolts after removing them.

– Tighten the bolts in the steps in the sequence shown:

Step	Bolts	Tightening Specification/Additional Turn
1.	-1 to 9-	Install all the way by hand
2.	-1 to 9-	8 Nm
3.	-1 to 9-	45° additional turn

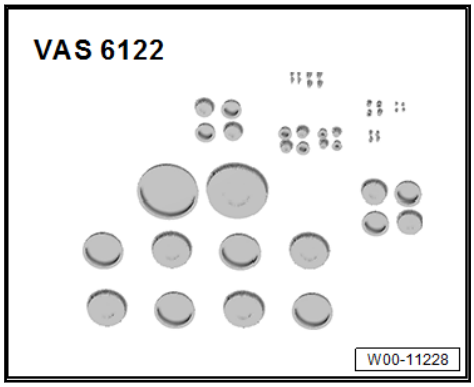


8.2 Transmission Fluid Pan, Removing and Installing

Special tools and workshop equipment required

♦ Used Oil Collection and Extraction Unit - SMN372500-

♦ Engine Bung Set - VAS6122-



Removing

♦ Pay attention to ⇒ “4 Repair Information”, page 6 .

♦ Pay attention to ⇒ “4.2 Guidelines for Clean Working Conditions”, page 7 .

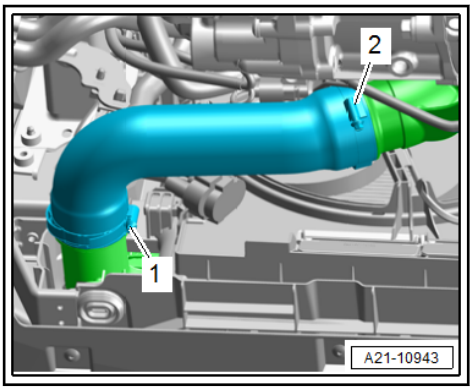
– Remove the air filter housing. Refer to ⇒ Engine Mechanical; Rep. Gr. 24 ; Air Filter; Air Filter Housing, Removing and Installing .

– Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Noise Insulation, Removing and Installing .

– Remove the left front wheel spoiler. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Wheel Housing Liner; Overview - Front Wheel Housing Liner .

– Loosen the hose clamps -1 and 2- and remove the air duct hose.

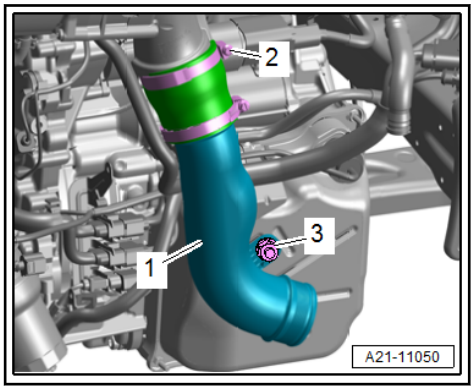
– Seal the open lines and connections with clean plugs from the Engine Bung Set - VAS6122- .



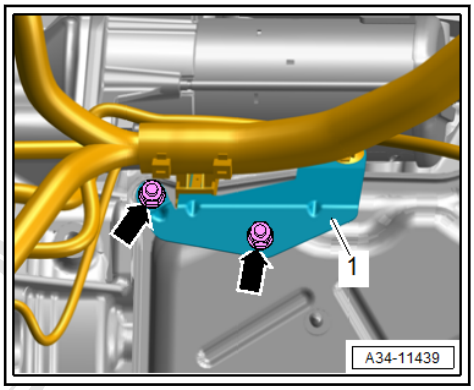
– Loosen the clamp -2-.

– Remove the nut -3- and the air duct pipe -1-.

– Seal the open lines and connections with clean plugs from the Engine Bung Set - VAS6122- .

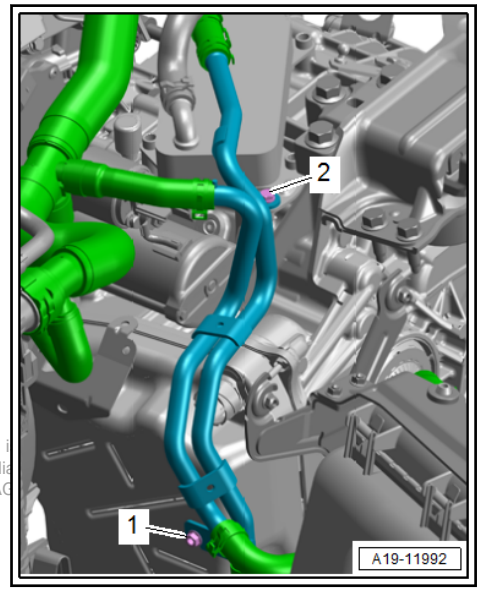


– Remove the bolts -arrows- and push the bracket -1- with the wiring harness to the side.



– Remove the nut -1- and bolt -2- and push the coolant pipes on the transmission slightly to the side.

– Drain the transmission fluid. Refer to ⇒ “9.3 Transmission Fluid, Draining and Filling”, page 83 .



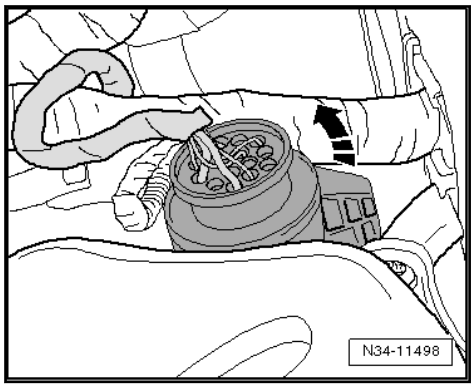
NOTICE

Risk of destroying due to electrostatic charge.

- **Do not touch the connector terminals.**
- **Touch a grounded object (for example the hoist) and discharge any static electricity.**

– To discharge any static electricity, touch the ground, a heater or hoist with a hand (without gloves).

– Turn the twist lock counter-clockwise -arrow- and disconnect the connector from the transmission and remove.



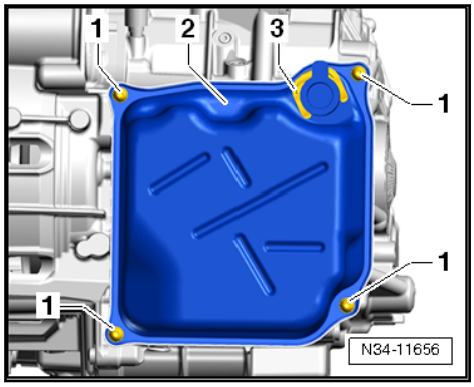
– Place the Used Oil Collection and Extraction Unit - SMN372500- under the transmission.

– Remove the clamp -3-.

– Loosen and remove the screws -1- in a diagonal sequence.

– Remove the oil pan -2- and if necessary loosen the oil pan by hitting lightly with a rubber hammer.

• While doing so, drain the ATF remaining in the oil pan in the Used Oil Collection and Extraction Unit - SMN372500- .



Installing

Install in the reverse order of removal while noting the following:

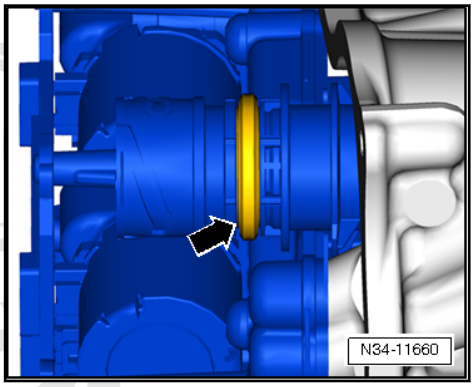
• Replace the oil pan, oil pan bolts, clamp and seal after removal.

– Clean the sealing surface on the transmission housing of oil and grease.

– Tape off the connector for the mechatronic with cloth tape, so that the seal on the shape of the connector is not damaged when removing.

– Place the O-ring -arrow- on the connector and coat it with transmission fluid.

– Remove the rest of the adhesive tape. There may be no residue present in the seal area.



– Position the new oil pan -2- and tighten the new bolts -1- diagonally in multiple steps.

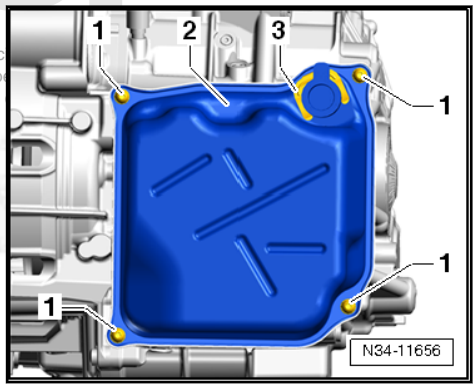
• When positioning oil pan, ensure the wires are not pinched.

– Install the new clamp -3-.

• The offset side of the clamp points to the transmission.

– Attach and lock the mechatronic connector on the transmission.

– Fill the transmission fluid (refer to ⇒ “9.3 Transmission Fluid, Draining and Filling”, page 83) and check the transmission fluid level (refer to ⇒ “9.2 Transmission Fluid Level, Checking”, page 78).



Tightening Specifications

♦ Refer to ⇒ “8.1 Overview - Mechatronic”, page 71

♦ Refer to ⇒ Engine Mechanical; Rep. Gr. 24 ; Air Filter; Overview - Air Filter Housing .

♦ Refer to ⇒ Engine Mechanical; Rep. Gr. 21 ; Turbocharger; Overview - Turbocharger .

♦ Refer to ⇒ Engine Mechanical; Rep. Gr. 21 ; Charge Air System; Overview - Charge Air System .

♦ Wheel spoiler. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Wheel Housing Liner; Overview - Front Wheel Housing Liner .

♦ Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .

8.3 Mechatronic, Removing and Installing

Removing

♦ Pay attention to ⇒ “4 Repair Information”, page 6 .

♦ Pay attention to ⇒ “4.2 Guidelines for Clean Working Conditions”, page 7 .

– Remove the transmission fluid pan. Refer to ⇒ “8.2 Transmission Fluid Pan, Removing and Installing”, page 72 .

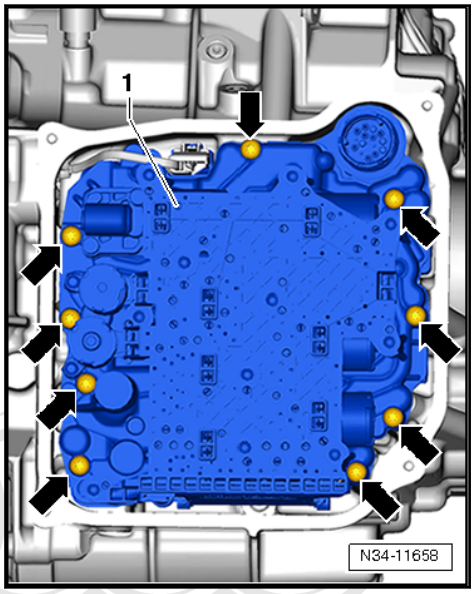
NOTICE

Risk of destroying due to electrostatic charge.

– Do not touch the connector terminals.

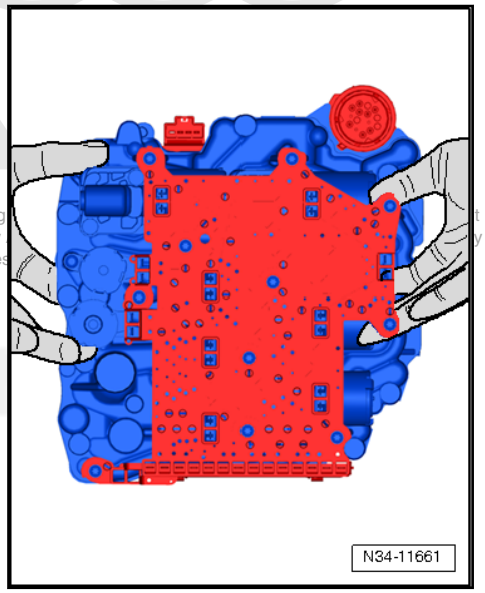
– Touch a grounded object (for example the hoist) and discharge any static electricity.

– Loosen and remove the screws -arrows- in a diagonal sequence.
– Carefully remove the mechatronic -1-.



Holding and Carrying the Mechatronic

– Remove the Dual-Clutch Transmission Mechatronic - J743- .



Store the Mechatronic Properly

– Store the Mechatronic so that the sensors -arrows- face upward.

Installing

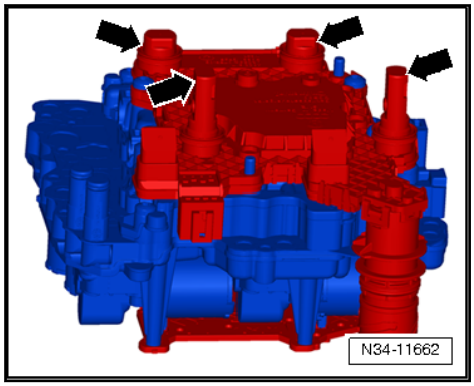
Install in the reverse order of removal while noting the following:

- Replace the bolts for the DSG Transmission Mechatronic - J743- after removing.

NOTICE

Risk of destroying due to electrostatic charge.

– Do not touch the connector terminals.
– Touch a grounded object (for example the hoist) and discharge any static electricity.



– Carefully place the Mechatronic -1- in the transmission.

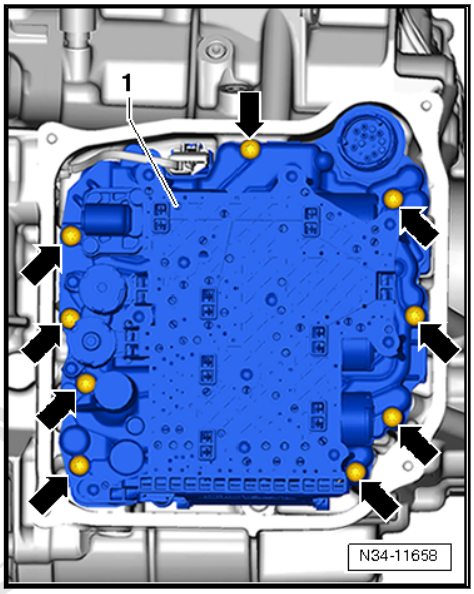
• Electrical wire to Transmission Input Speed Sensor - G182- and Clutch Oil Temperature Sensor - G509- must not be pinched.

– Tighten the bolts -arrows- for the Dual-Clutch Transmission Mechatronic - J743- . Refer to ⇒ Fig. "" Dual-Clutch Transmission Mechatronic -J743- - Tightening Specification and Sequence"" , page 72 .

– Install the transmission fluid pan. Refer to ⇒ "8.2 Transmission Fluid Pan, Removing and Installing", page 72 .

– Fill the transmission fluid (refer to ⇒ "9.3 Transmission Fluid, Draining and Filling", page 83) and check the transmission fluid level (refer to ⇒ "9.2 Transmission Fluid Level, Checking", page 78).

– Perform a `Basic Setting` using the ⇒ Vehicle diagnostic tester.



Basic Setting

– Select `Individual test` on the ⇒ Vehicle diagnostic tester.

♦ Dual clutch transmission ODL

♦ 01 - OBD-capable systems

♦ 02 - Transmission electronics

♦ 02 - Transmission electronic functions

♦ 02 - Mechatronic, replacing

Tightening Specifications

♦ Refer to ⇒ "8.1 Overview - Mechatronic", page 71

9 Transmission Fluid

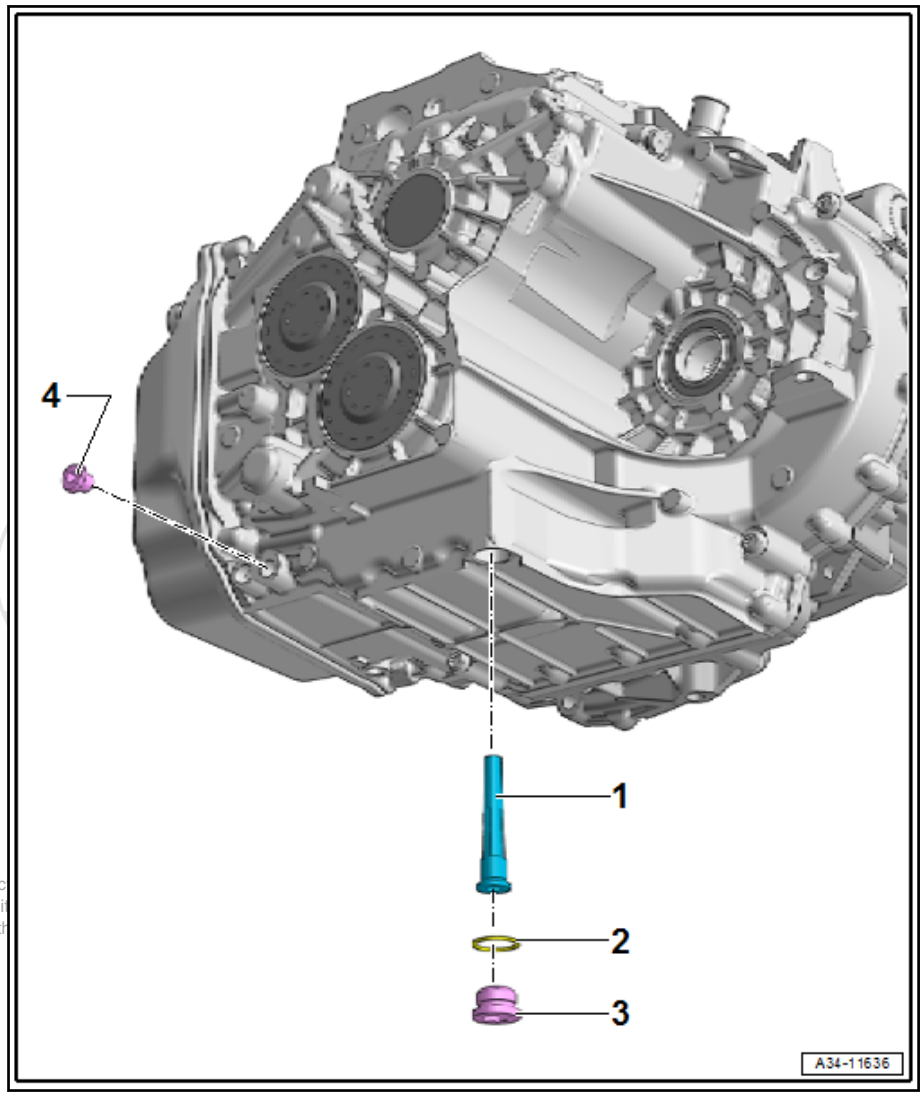
9.1 Overview - Drain and Check Plugs

1 - Overflow Pipe
- ❑ 3 Nm

2 - Seal
- ❑ Always replace

3 - Drain Plug
- ❑ 45 Nm
- ❑ For transmission fluid

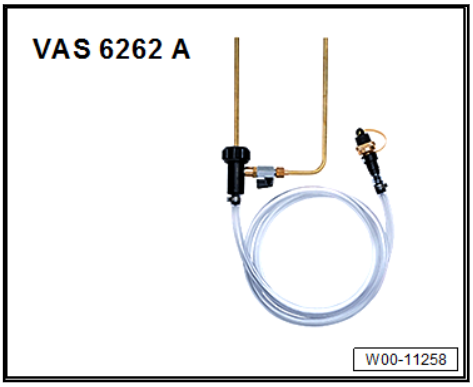
4 - Mechatronic Drain Plug
- ❑ 20 Nm



9.2 Transmission Fluid Level, Checking

Special tools and workshop equipment required

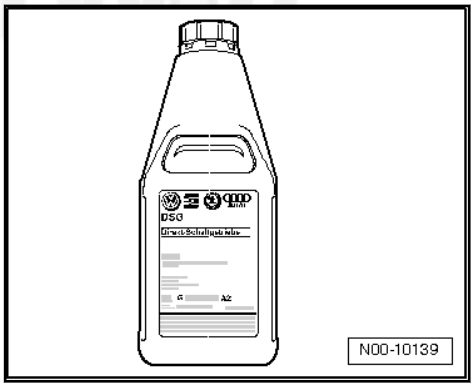
- Oil Filler - VAS6262A-



- If necessary, Oil Filler - Adapter 6 - VAS6262/6-

- Used Oil Collection and Extraction Unit - SMN372500-

- Original 1 liter transmission fluid container and dual-clutch transmission fluid. Refer to ⇒ Electronic Parts Catalog (ET-KA) for the part number.

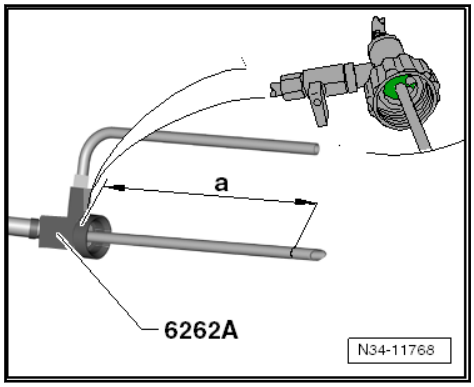


- Vehicle Diagnostic Tester
- Protective Eyewear
- Acid-Resistant Safety Gloves

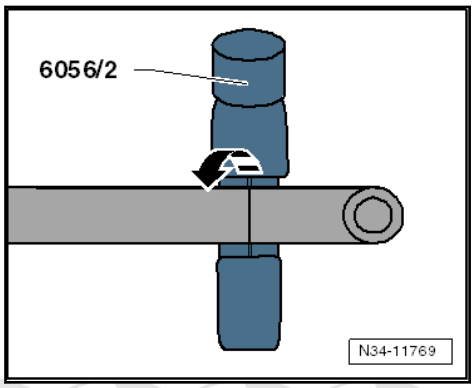
Bleed Pipe Length, Measuring on Oil Filler - VAS6262A- and Shortening if Necessary

The pipe must be shorted to dimension -a- so that the bleed pipe on the adapter for the Oil Filler - VAS6262A- does not touch the bottom on some containers.

- Dimension -a- = 210 mm (8.27 in.).
- Dimension -a- is measured starting from the shaft (the green surface in the magnified area) on the adapter for the Oil Filler - VAS6262A- .



– Mark the dimension on the bleed pipe and shorten it using the Brake Line Tool Kit - Pipe Cutter - VAS6056/2- .
– Clean the Oil Filler - VAS6262A- .



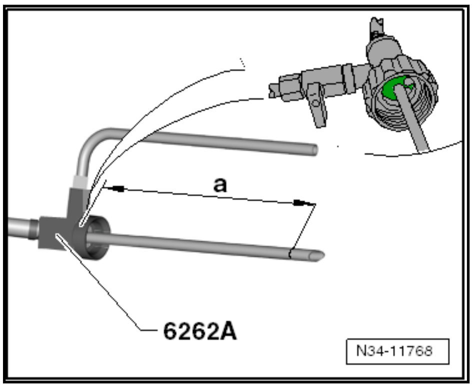
Procedure

♦ Pay attention to ⇒ “4 Repair Information”, page 6 .
♦ Pay attention to ⇒ “4.2 Guidelines for Clean Working Conditions”, page 7 .
♦ Pay attention to the general information “Oil, Environmental and Disposal Regulations”. Refer to ⇒ “4.3 General Repair Information”, page 7 .

CAUTION

Risk of injury due to the radiator fan turning on automatically.

– Maintain distance to the fan when working near the radiator.



– Measure the length of the bleed pipe on the Adapter For Oil Filling - VAS6262A- and shorten it if necessary. Refer to ⇒ page 80 .

Test Conditions

- Transmission not in emergency operation mode.
- Move the vehicle onto a four-column workshop hoist or over a work pit so it is completely level.
- Selector lever in "P".
- The parking brake button is pulled on to activate the electro-mechanical parking brake.
- Suction hoses from an exhaust extracting system are connected.
- Engine running at idle.
- The A/C system and the heater are off.

Transmission Fluid Temperature, Reading

- ♦ The transmission fluid level changes with the transmission fluid temperature: too low of a transmission fluid temperature leads to overfilling, and too high of a transmission fluid temperature leads to underfilling.
- ♦ An incorrect transmission fluid filling impairs the transmission function.
- ♦ The transmission fluid temperature must not be higher than 30 °C (86 °F) when starting the procedure. Let the transmission cool down if necessary.
- ♦ Test temperature: 35 to 45 °C (95 to 113 °F).

– Connect the Vehicle Diagnostic Tester and identify the vehicle in `Guided Functions`.

– Select `02 - Transmission electronics`.

– Select `02 - Read measured values`.

- Specified value at beginning of test: not higher than 30 °C (86 °F), otherwise let the transmission cool down.

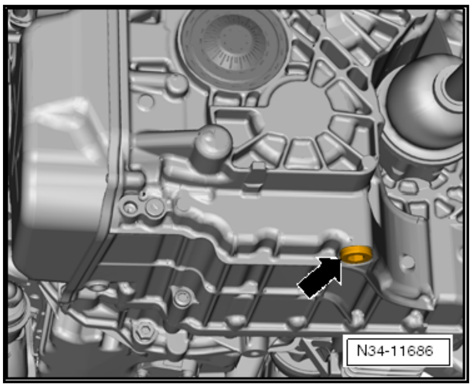
Transmission Fluid Level, Checking

– Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Noise Insulation, Removing and Installing .

– Place the Used Oil Collection and Extraction Unit - SMN372500- under the transmission.

- The engine is idling and the selector lever is in "P".

– Remove the check plug -arrow-.

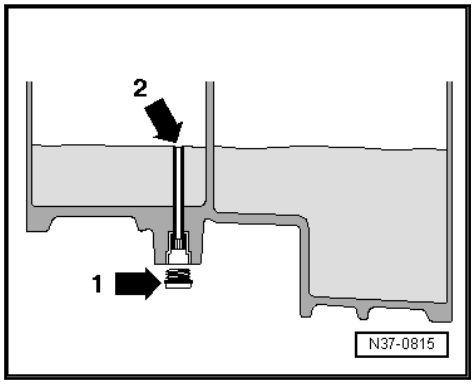


- The collected transmission fluid runs out of the overflow pipe -arrow 2-.
- Some gear oil always leaks out when opening the inspection plug -arrow 1-, regardless of the gear oil level.

– Check whether overflow tube is securely installed in inspection plug hole.

- Gear oil level cannot be checked exactly if overflow tube is loose.
- If some transmission fluid still leaks out at a transmission fluid temperature between 35 to 45 °C (95 to 113 °F) (due to additional warming), the transmission fluid level is OK.
- Regardless of the gear oil level, a small wave of fluid comes out of the overflow tube every 30 seconds due to the multi-plate clutch cooling oil pulse. This procedure is irrelevant for checking the transmission fluid level.
- Leaked gear oil must not be reused.

– If the transmission fluid level is OK, perform the final procedures. Refer to ⇒ page 83 .



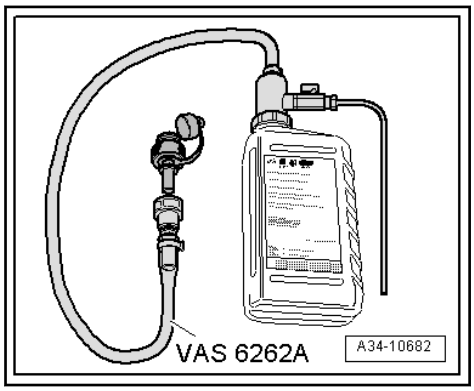
Transmission Fluid, Filling

– If no gear oil leaks out at the overflow tube between 35 to 45 °C (95 to 113 °F), fill gear oil as follows.

– Shake the container before opening.

– Install the container for the dual clutch transmission oil on the Oil Filler - VAS6262A- .

- Use the Oil Filler - Adapter 6 - VAS6262/6- if the container thread does not fit on the Adapter For Oil Filling - VAS6262A- .



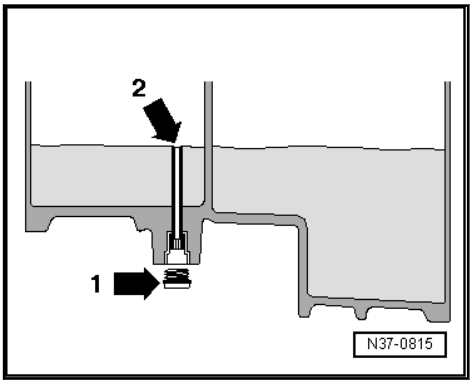
– Install the Adapter For Oil Filling - VAS6262A- into the opening for the check plug hand-tight.

– Hold the container with the Oil Filler - VAS6262A- as high as possible over the dual-clutch transmission and allow the transmission fluid to flow into the dual clutch transmission.

– To check if the DSG transmission is sufficiently filled, disconnect the quick-release coupling on the Oil Filler - VAS6262A- at regular intervals and seal the hose with a finger or a clean plug.

- The collected transmission fluid runs out of the overflow pipe -arrow 2-.
- Some oil always runs our regardless of transmission fluid level.
- If some transmission fluid still leaks out at a transmission fluid temperature between 35 to 45 °C (95 to 113 °F) (due to additional warming), the transmission fluid level is OK.
- Regardless of the gear oil level, a small wave of fluid comes out of the overflow tube every 30 seconds due to the multi-plate clutch cooling oil pulse. This procedure is irrelevant for checking the transmission fluid level.
- Leaked gear oil must not be reused.
- Monitor the transmission fluid temperature on the Vehicle Diagnostic Tester while filling the transmission fluid. If 45 °C (113 °F) is exceeded, cancel procedure and let transmission cool.

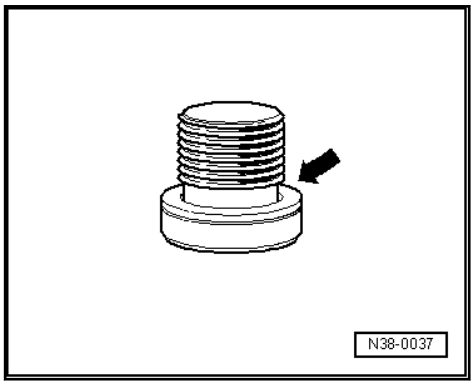
– If the transmission fluid level is OK, perform the final procedures. Refer to ⇒ page 83 .



Final Procedures

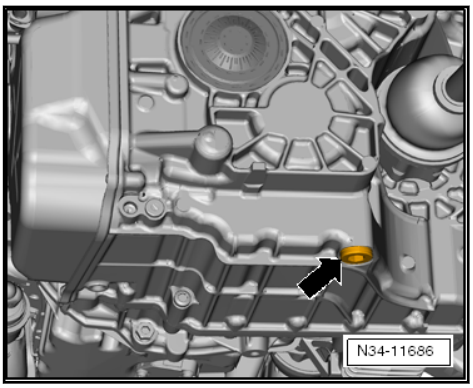
- Replace the seal -arrow- for the check plug after removal.

– Remove the Oil Filler - VAS6262A- from the transmission.



– Tightening the check plug -arrow-.

– Switch off the ignition and disconnect the data link connector.



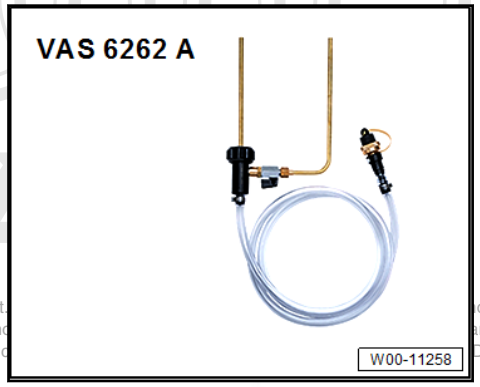
Tightening Specifications

- ♦ Refer to ⇒ “8.1 Overview - Mechatronic”, page 71
- ♦ Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .

9.3 Transmission Fluid, Draining and Filling

Special tools and workshop equipment required

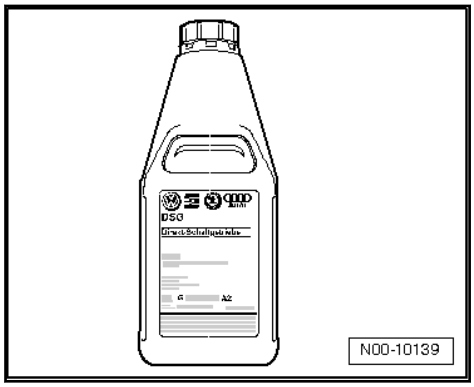
- Oil Filler - VAS6262A-



- If necessary, Oil Filler - Adapter 6 - VAS6262/6-

- Used Oil Collection and Extraction Unit - SMN372500-

- Original 1 liter transmission fluid container and dual-clutch transmission fluid. Refer to ⇒ Electronic Parts Catalog (ET-KA) for the part number.



- Protective Eyewear
- Acid-Resistant Safety Gloves

Procedure

- Pay attention to ⇒ “4 Repair Information”, page 6 .

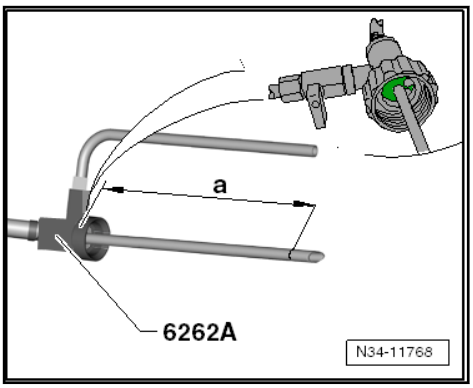
- Pay attention to ⇒ “4.2 Guidelines for Clean Working Conditions”, page 7 .
- Pay attention to the general information “Oil, Environmental and Disposal Regulations”. Refer to ⇒ “4.3 General Repair Information”, page 7 .

CAUTION

Risk of injury due to the radiator fan turning on automatically.

– Maintain distance to the fan when working near the radiator.

– Measure the length of the bleed pipe on the Adapter For Oil Filling - VAS6262A- and shorten it if necessary. Refer to ⇒ page 80 .



Test Conditions

- Transmission not in emergency operation mode.
- Move the vehicle onto a four-column workshop hoist or over a work pit so it is completely level.
- Selector lever in “P”.
- Parking brake engaged.
- The engine is off.

Transmission Fluid, Draining

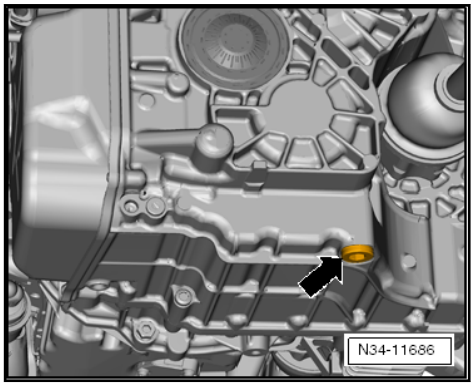
– Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Noise Insulation, Removing and Installing .

– Place the Used Oil Collection and Extraction Unit - SMN372500- under the transmission.

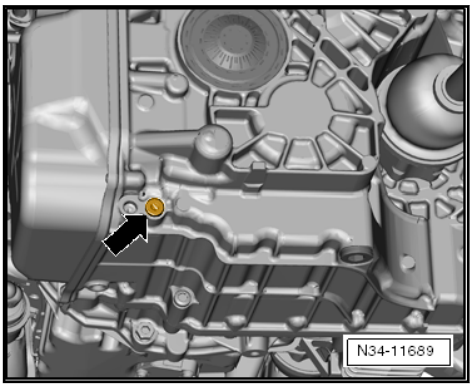
– Remove the check plug -arrow-.

- The collected gear oil then runs out of the overflow tube.

– Remove the overflow pipe and let the transmission fluid drain.



– Remove the Mechatronic oil drain plug -arrow-.



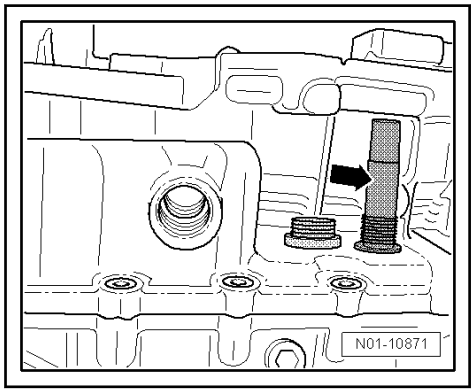
Tip:

- Aim the escaping transmission fluid using for example a metal strip into the Used Oil Collection and Extraction Unit .
- Approximately 1.2 liters (1.27 quarts) of fluid will drain out.

– Apply the Mechatronic oil drain plug with a new seal and tighten.

Transmission Fluid, Filling

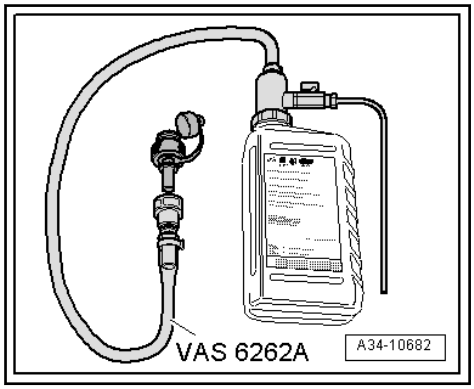
– Install the overflow pipe -arrow- until it stops and tighten.



– Shake the container before opening.

– Install the container with the transmission fluid for the DSG transmission on the Oil Filler - VAS6262A- .

• Use the Oil Filler - Adapter 6 - VAS6262/6- if the container thread does not fit on the Adapter For Oil Filling - VAS6262A- .



– Install the Adapter For Oil Filling - VAS6262A- into the opening for the check plug hand-tight.

– Hold the container with the Oil Filler - VAS6262A- as high as possible over the dual-clutch transmission and allow 5.5 liters (5.8 qts) of transmission fluid to flow into the dual clutch transmission.

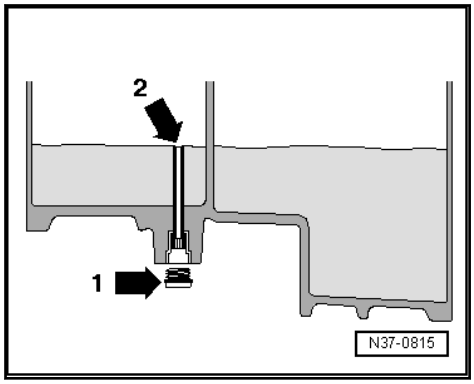
– Start the engine and let it run in idle.

– Press the foot brake and shift through all selector lever positions “P, R, N, D/S” at idle, retaining each position for at least 3 seconds.

– Move the selector lever into “P” position.

– Do not turn off the engine.

– Then check the transmission fluid level and add if necessary. Refer to ⇒ “9.2 Transmission Fluid Level, Checking”, page 78 .



Tightening Specifications

♦ Refer to ⇒ “8.1 Overview - Mechatronic”, page 71

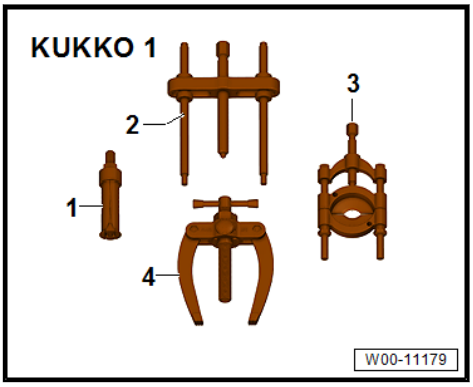
10 Transmission, Disassembling and Assembling

⇒ “10.1 Cap, Replacing”, page 87

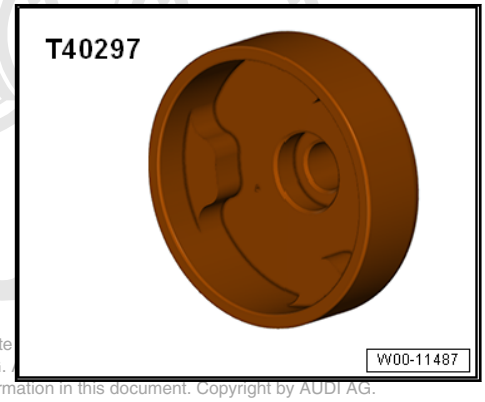
10.1 Cap, Replacing

Special tools and workshop equipment required

- -1- Internal Puller - VAS251605-



- -4- Counter Support - VAS251621-
- Timing Chain Tensioning Key - T40297-



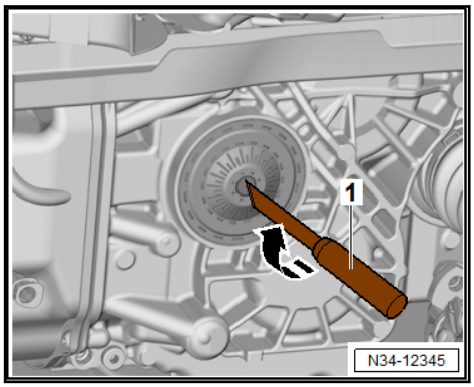
- Blade, commercially available

Removing

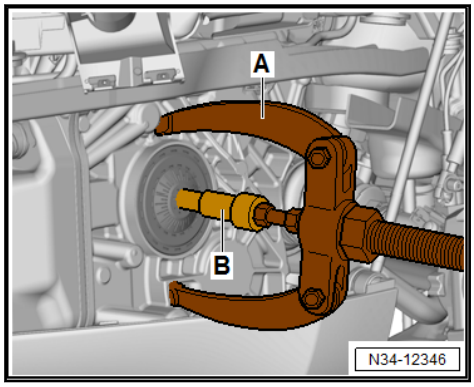
- Selector lever in “P”.

– Remove the left front wheel housing liner. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Wheel Housing Liner; Front Wheel Housing Liner, Removing and Installing .

– With a blade -1-, pierce through the center of the cap and remove all around the rubber. Diameter of the opening is approximately 15 mm (0.59 in.).

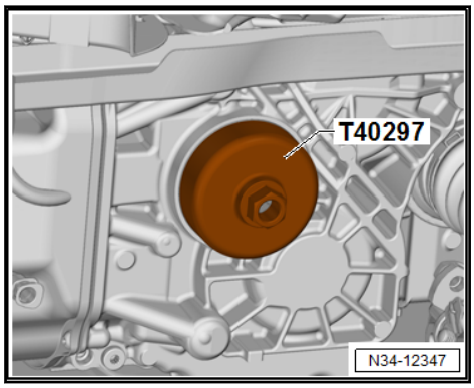


– Remove the cap using the Internal Puller (Kukko 21-2) - VAS251605- -B- and Counter Support (Kukko 22/1) - VAS251621- -A- from the transmission housing.
– Clean the sealing surface in the transmission housing carefully with a lint-free cloth.



Installing

– Without tilting, drive the new cap all the way into the transmission housing using the Timing Chain Tensioning Key - T40297- .
– Check the transmission fluid level. Refer to ⇒ “9.2 Transmission Fluid Level, Checking”, page 78 .
– Install the left front wheel housing liner. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Wheel Housing Liner; Front Wheel Housing Liner, Removing and Installing .



35 – Gears, Shafts

1 Gears and Shafts, Disassembling and Assembling

Gear and shaft disassembly and assembly is currently not provided.

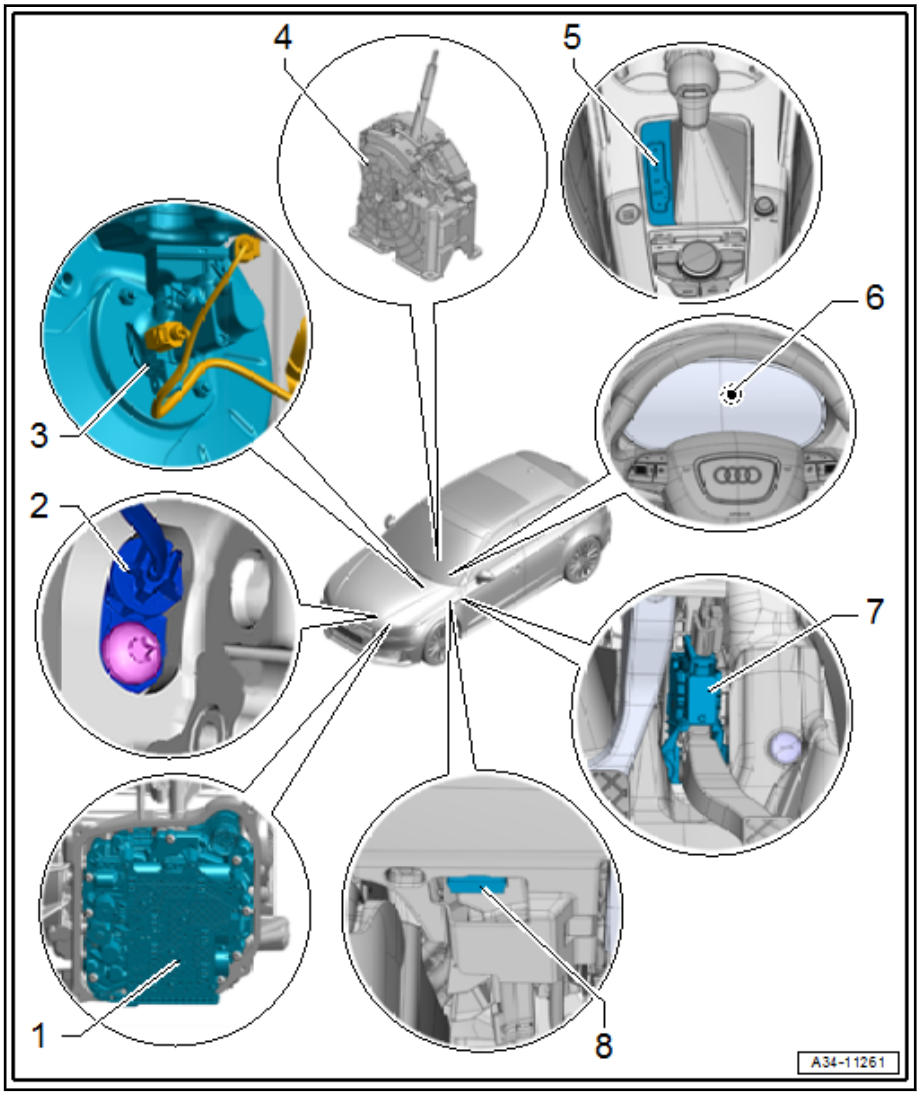
39 – Final Drive, Differential

1 Transmission Control

⇒ “1.1 Component Location Overview - Transmission Control”, page 90

⇒ “1.2 Component Location Overview - Mechatronic Sensor”, page 92

1.1 Component Location Overview - Transmission Control



1 - Dual-Clutch Transmission Mechatronic - J743-

- ❑ Bolted to the front of the transmission housing.
- ❑ Overview. Refer to ⇒ “8.1 Overview - Mechatronic”, page 71 .
- ❑ Refer to ⇒ “1.2 Component Location Overview - Mechatronic Sensor”, page 92

2 - Transmission Input Speed Sensor - G182- / Clutch Oil Temperature Sensor - G509-

- ❑ Not for this model

3 - Brake Lamp Switch - F- / Brake Pedal Switch - F63-

- ❑ On the brake master cylinder
- ❑ Overview. Refer to ⇒ Brake System; Rep. Gr. 47 ; Brake Booster/Brake Master Cylinder; Overview - Brake Booster/Brake Master Cylinder

4 - Shift Mechanism

- ❑ Components of the selector mechanism:

- ♦ Selector Lever - E313-
- ♦ Selector Lever Sensor System Control Module - J587-
- ♦ Selector Lever Park Position Lock Switch - F319-
- ♦ Shift Lock Solenoid - N110-

- ❑ The components cannot be replaced separately
- ❑ Removing and Installing. Refer to ⇒ “1.6 Shift Mechanism, Removing and Installing”, page 38 .

5 - Selector Lever Transmission Range Position Display Unit - Y26-

- ❑ In the center console insert
- ❑ Component Location Overview. Refer to ⇒ Electrical Equipment; Rep. Gr. 96 ; Lamps; Component Location Overview - Lamps in Center Console

6 - Transmission Range Display - Y6-

- ❑ Integrated in the instrument cluster
- ❑ Pay attention to the transmission control module safety functions if the transmission range display is flashing or illuminated. Refer to ⇒ “4.5 Transmission Control Module Safety Functions”, page 9 .
- ❑ Cannot be replaced separately
- ❑ Instrument cluster overview. Refer to ⇒ Electrical Equipment; Rep. Gr. 90 ; Instrument Cluster; Overview - Instrument Cluster .

7 - Kick Down Switch

- ❑ A programmed value for the Accelerator Pedal Position Sensor - G79- / Accelerator Pedal Position Sensor 2 - G185- (integrated in the accelerator pedal module) is saved in the engine control module as a kick-down signal.
- ❑ Signal transmitted from engine control module to transmission control module via the CAN bus.

- ❑ Overview. Refer to ⇒ Rep. Gr. 20 ; Accelerator Mechanism; Overview - Accelerator Pedal Module .

8 - Diagnostic Connection

- ❑ For the Vehicle Diagnostic Tester
- ❑ In driver-side footwell
- ❑ Check all of the listed components using the ⇒ Vehicle diagnostic tester in `Guided Fault Finding`.

1.2 Component Location Overview - Mechatronic Sensor

A - Gear Position Distance Sensor 4 - G490- for Gears R and 4

B - Gear Position Distance Sensor 1 - G487- for Gears 5 and 1

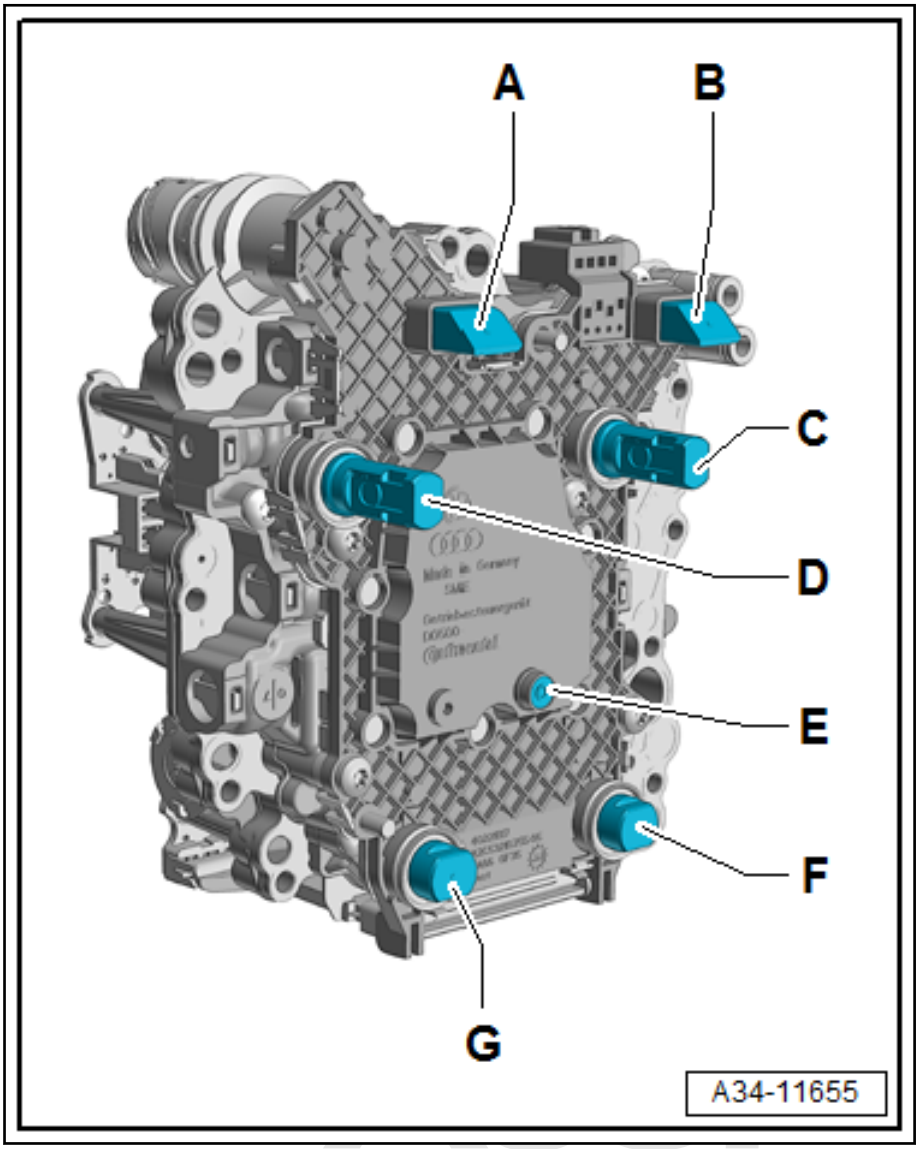
C - Transmission Input Speed Sensor 2 - G612-

D - Transmission Input Speed Sensor 1 - G632-

E - Transmission Fluid Temperature Sensor - G93-

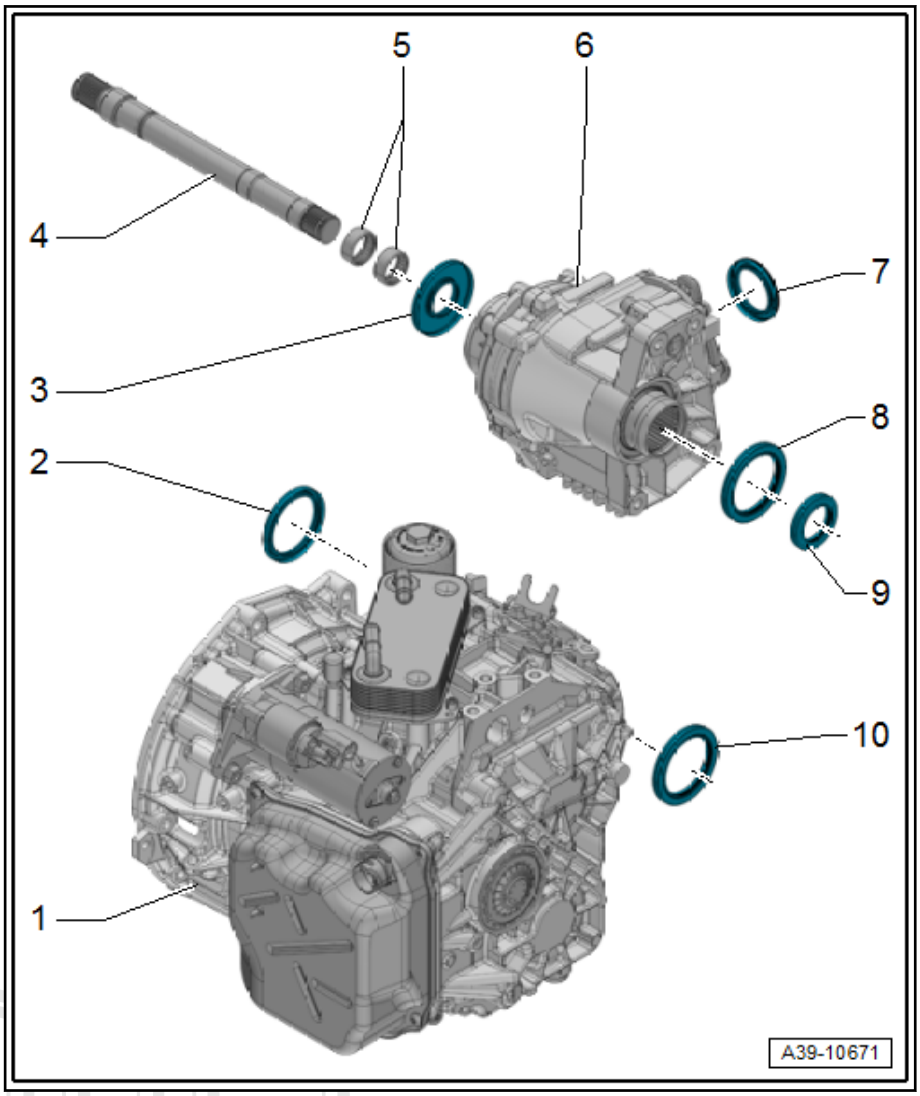
F - Gear Position Distance Sensor 2 - G488- for Gears 2 and 6

G - Gear Position Distance Sensor 3 - G489- for Gears 3 and 7



2 Seals

2.1 Component Location Overview - Seals



1 - Transmission

2 - Right Seal

- ❑ Replacing. Refer to ⇒ “2.3 Right Seal, Replacing”, page 95 .

3 - Seal

- ❑ For the stub shaft on the right side of the bevel box
- ❑ Replacing. Refer to ⇒ “4.3 Right Seal, Replacing”, page 114 .

4 - Right Stub Shaft

5 - Needle Bearing (Polygon Bearing)

- ❑ If it is difficult to move when the right stub shaft is removed, this is not an indication of a fault
- ❑ Acoustic test only when installed
- ❑ Check for damage, for example for cracks on the bearing outer race
- ❑ Replacing. Refer to ⇒ “4.5 Right Stub Shaft Needle Bearing (Polygon Bearing), Replacing”, page 128 .

6 - Bevel Box

7 - Seal

- ❑ For the bevel box output shaft
- ❑ Replacing. Refer to ⇒ “4.4 Output Flange Seal, Replacing”, page 116 .

8 - Seal

- ❑ Between the transmission and the bevel box, on the left side of the bevel box
- ❑ Replacing. Refer to ⇒ “4.2 Left Gaskets, Replacing”, page 110 .

9 - Seal

- ❑ For the stub shaft on the left side of the bevel box

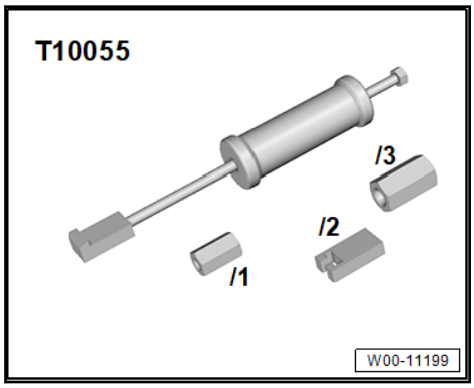
10 - Left Seal

- ❑ Replacing. Refer to ⇒ “2.2 Left Seal, Replacing”, page 94

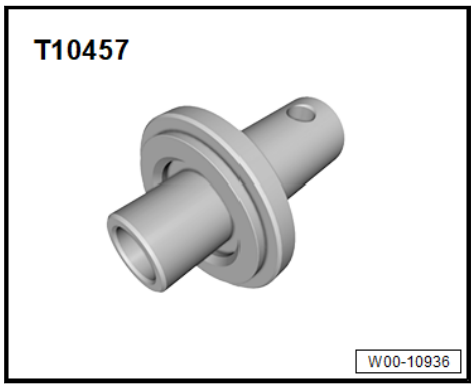
2.2 Left Seal, Replacing

Special tools and workshop equipment required

- Puller - Unit Injector - T10055-



- Thrust Piece - T10457-



- Commercially available drill
- Commercially available metal drill bit, 2 to 4 mm
- Bolt approximately 4 mm diameter
- Sealing Grease - G 052 128 A1-

Procedure

- The transmission is installed.

– Remove the left drive axle. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Drive Axle; Drive Axle, Removing and Installing .

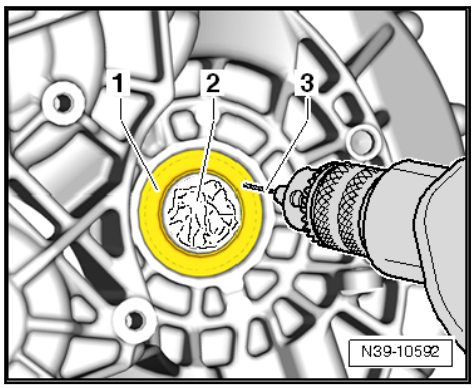
– Grease the drill bit -3- so that the shavings stick to it.

NOTICE

Risk of damaging the bearing when drilling.

– Only drill through the metal ring of the shaft seal.

– Do not install the screw too deep.



– Seal the opening on the transmission for the drive axle with a clean cloth -2-.

– Carefully drill a 2 to 4 mm hole into the outer metal ring -1- of the seal.

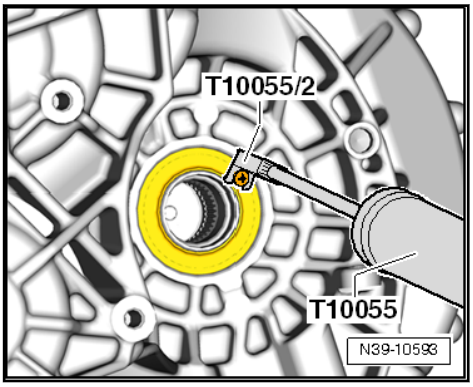
– Install a bolt (approximately 4 mm diameter) into the drilled out hole on the seal.

– Remove the seal with the Puller - Unit Injector - T10055- with the Puller - Unit Injector - Adapter 2 - T10055/2- .

– Carefully remove the cloth. Make sure that no shavings get into the transmission when doing so.

– Carefully clean the transmission and the opening for the drive axle.

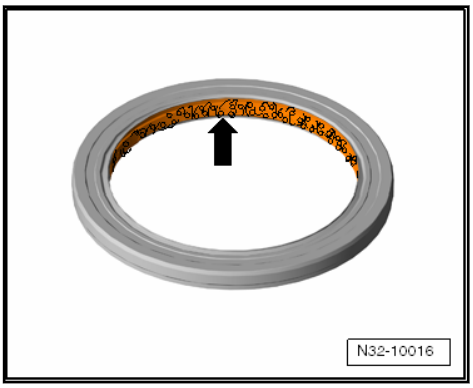
• If only metal ring from the seal could be removed, carefully pry out remaining seal using screwdriver.



– Coat the outer edge and sealing lips on the new seal with transmission fluid.

• Installation position: open side of the seal faces the transmission.

– Immediately mount the new seal by hand and push it in as far as possible so that it is secure in the transmission housing.

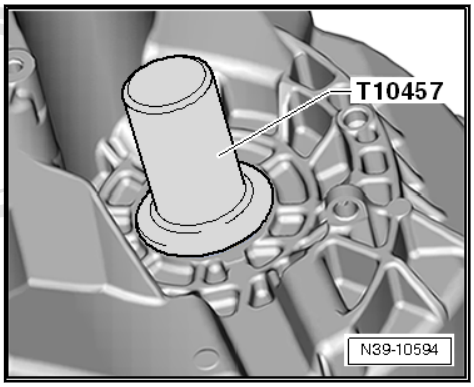


– Drive the seal in all the way using the Thrust Piece - T10457- and do not tilt the seal while doing so.

– Check the transmission fluid level land fill. Refer to ⇒ “9.2 Transmission Fluid Level, Checking”, page 78 .

Tightening Specifications

♦ Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Drive Axle; Overview - Drive Axle .

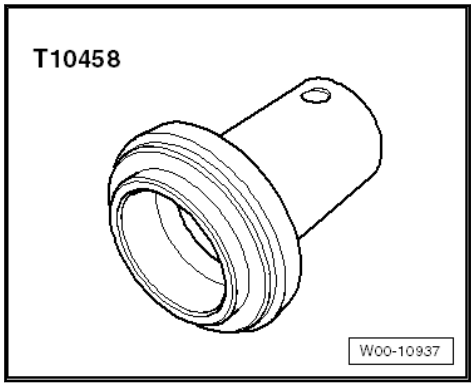


2.3 Right Seal, Replacing

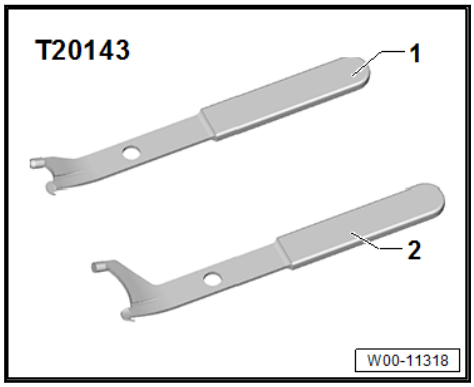
Special tools and workshop equipment required

♦ Used Oil Collection and Extraction Unit - SMN372500-

♦ Thrust Piece - T10458-



♦ Puller - Crankshaft/Power Steering Seal - T20143-



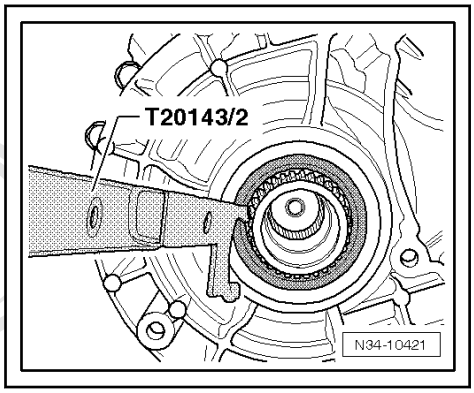
♦ Sealing Grease - G 052 128 A1-

Procedure

– Remove the bevel box. Refer to ⇒ “6.1 Bevel Box, Removing”, page 61 .

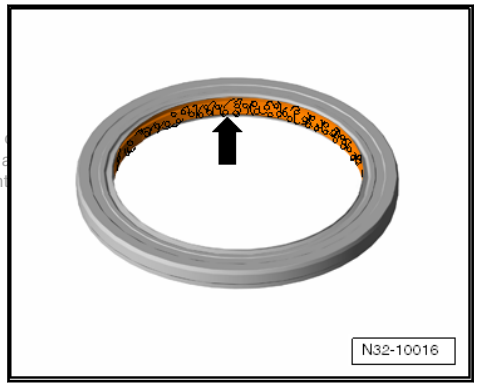
– Place the Used Oil Collection and Extraction Unit - SMN372500- under the transmission.

– Pry out the seal on the DSG transmission using the Puller - Crankshaft/Power Steering Seal - T20143/1- or - T20143/2- .

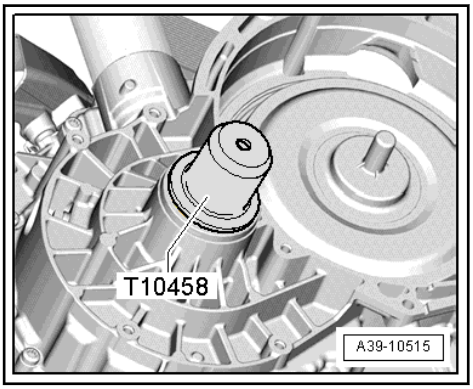


– Coat the outer circumference of the new seal with transmission fluid.

– Fill the space between the sealing/dust lip -arrow- halfway with Sealing Grease - G 052 128 A1- .



– Carefully install the seal all the way using the Thrust Piece - T10458- .
– Install the bevel box. Refer to ⇒ “6.2 Bevel Box, Installing”, page 64 .



3 Gear Oil

⇒ “3.1 Gear Oil, Checking Level”, page 98

⇒ “3.2 Gear Oil, Draining and Filling”, page 99

3.1 Gear Oil, Checking Level

- The bevel box is attached to the side of the transmission and has it own oil system.
- Refer to the ⇒ Electronic Parts Catalog (ETKA) for the gear oil specification.

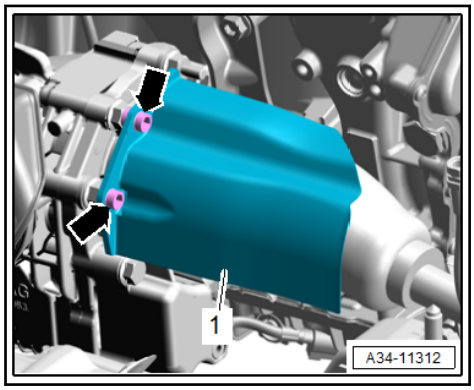
Procedure

- Replace the fluid filler hole plug after removal.
- Move the vehicle onto a four-column workshop hoist or over a work pit so it is completely level.
- The engine is off.

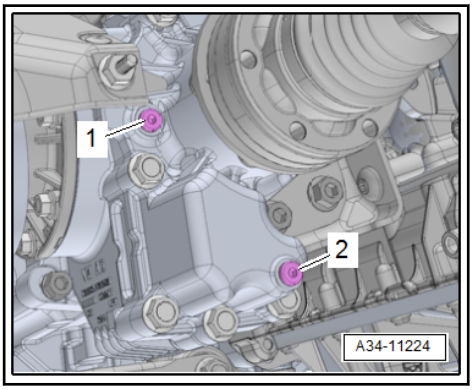
– Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Noise Insulation, Removing and Installing .

– Remove the nuts -arrows- and remove the right drive axle heat shield.

– Place a cloth underneath to catch escaping gear oil.



– Remove the oil filler hole plug -1-.



Bevel Box Characteristics RS3, TT RS:

- Pay attention to the part number index of the bevel box. Refer to ⇒ “1.2 Bevel Box Identification”, page 2 .
- For the bevel box “0CP.409.053.E” the gear oil level is under the fluid filler hole and therefore cannot be checked.
- If the oil level is filled to the oil filler hole extract 100 ml gear oil. Refer to ⇒ “3.2 Gear Oil, Draining and Filling”, page 99 .
- For the all other bevel boxes the fluid level is correct when the fluid is up to the lower edge of the fluid filler hole -1-.

RS Q3:

♦ The oil level is correct if the oil is filled to the lower edge of the oil filler hole -1-.

All Vehicles:

– Carefully remove leaking oil from the bevel box.

– Install the drive axle heat shield. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Drive Axle; Drive Axle Heat Shield, Removing and Installing .

Tightening Specifications

♦ Oil filler hole plug. Refer to ⇒ Fig. ““Tightening Specifications”“ , page 103

♦ Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .

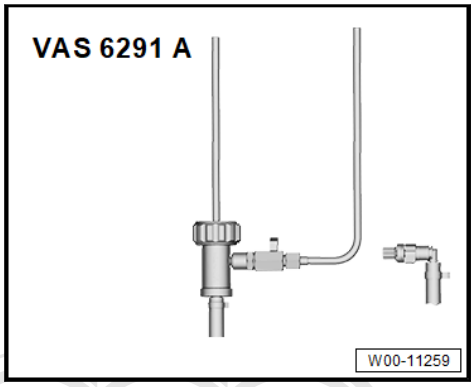
3.2 Gear Oil, Draining and Filling

♦ Refer to the ⇒ Electronic Parts Catalog (ETKA) for the gear oil specification.

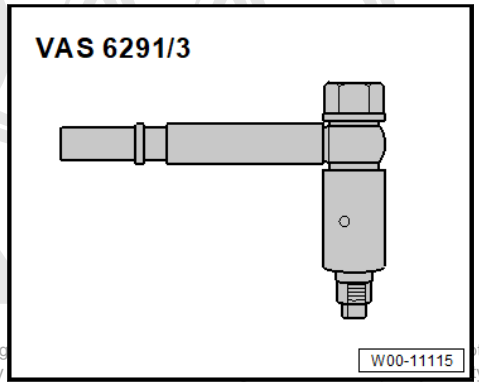
Special tools and workshop equipment required

♦ If necessary, Oil Filler - Adapter 6 - VAS6262/6-

- Charging Device for AWD Clutch Coupling 2 - VAS6291A-

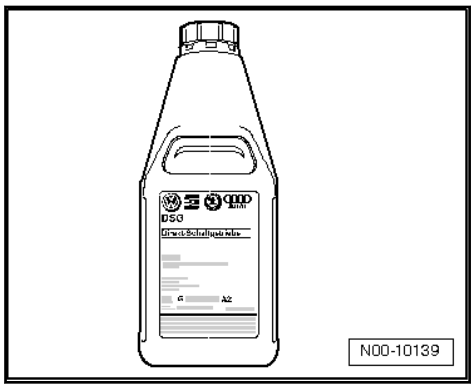


- Charging Device For AWD Clutch Coupling 2 - Adapter 3 - VAS6291/3-



- Used Oil Collection and Extraction Unit - SMN372500-

- Refer to the ⇒ Electronic Parts Catalog (ETKA) for the correct original transmission fluid container, gear oil; part number.



- Protective Eyewear
- Acid-Resistant Safety Gloves
- Commercially available sprayer with maximum 6 mm diameter hose.

Draining

- Replace the oil drain plug and fluid filler hole plug after removal.
- Move the vehicle onto a four-column workshop hoist or over a work pit so it is completely level.
- The engine is off.

– Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Noise Insulation, Removing and Installing .

– Place the Used Oil Collection and Extraction Unit - SMN372500- under the transmission.

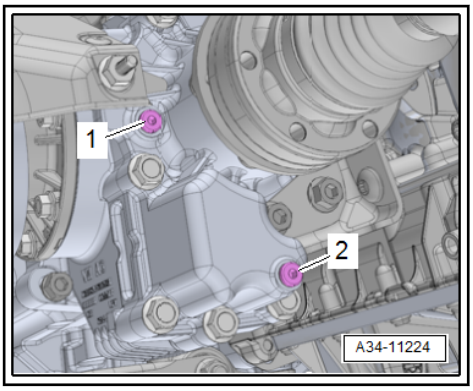
CAUTION

Hot gear oil.

Injury to eyes and hands.

– Wear protective eyewear.

– Wear acid-resistant safety gloves.



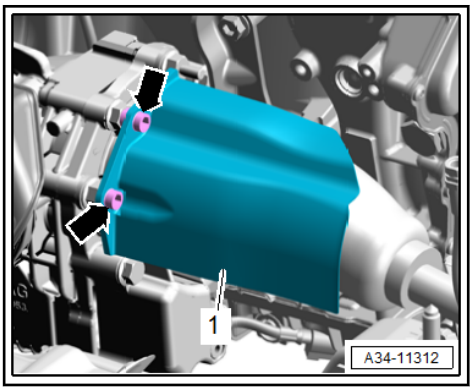
– Remove the oil drain plug -2- and drain the gear oil.

– Tighten the new oil drain plug.

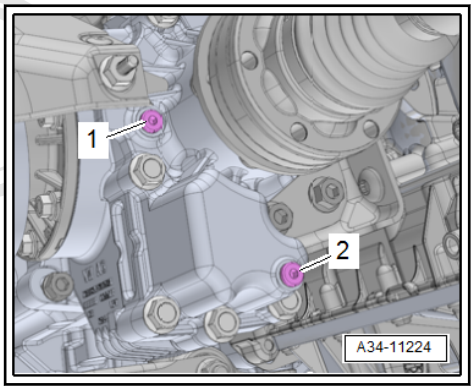
Filling

– Remove the nuts -arrows- and remove the right drive axle heat shield.

– Route the hose for the Charging Device for AWD Clutch Coupling 2 - VAS6291A- through the engine compartment.

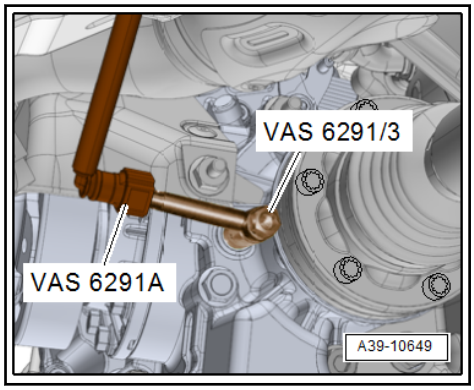


– Remove the oil filler hole plug -1-.



– Install the Charging Device For AWD Clutch Coupling 2 - Adapter 3 - VAS6291/3- all the way.
– Engage the elbow on the Charging Device for AWD Clutch Coupling 2 - VAS6291A- with the Charging Device For AWD Clutch Coupling 2 - Adapter 3 - VAS6291/3-

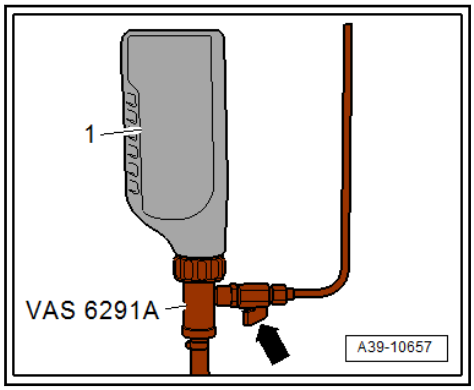
• The hose must not sag.



– Pay attention to that the valve -arrow- is closed.
– Attach the fluid container -1- to the Charging Device for AWD Clutch Coupling 2 - VAS6291A- .

• The Oil Filler - Adapter 6 - VAS6262/6- must also be used on some fluid containers.

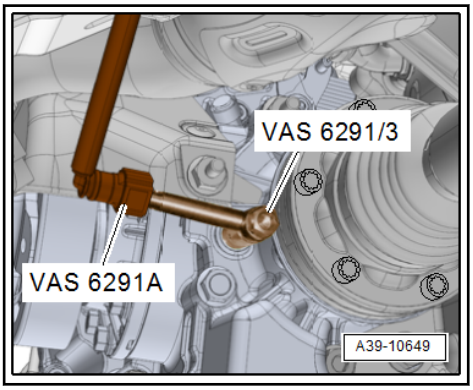
– Open the valve -arrow- and hold up the fluid container as shown.



- The bevel box is now filled.
- When the bevel box is filled correctly, fluid comes out at the Charging Device For AWD Clutch Coupling 2 - Adapter 3 - VAS6291/3- .

– If the gear oil leaks out at the Charging Device For AWD Clutch Coupling 2 - Adapter 3 - VAS6291/3- , hold the oil container in such a way so that any excess oil flows back into the container.

– When the oil stops flowing, remove the Charging Device for AWD Clutch Coupling 2 - VAS6291- .



Bevel Box Characteristics RS3, TT RS:

- Pay attention to the part number index of the bevel box. Refer to ⇒ “1.2 Bevel Box Identification”, page 2 .
- For the bevel box “0CP.409.053.E” the gear oil level is under the fluid filler hole.
- As a result, 100 ml of gear oil must be extracted from the bevel box after filling.
- Use a commercially available sprayer with maximum 6 mm diameter hose.
- For the all other bevel boxes the fluid level is correct when the fluid is up to the lower edge of the fluid filler hole -1-.

RS Q3:

♦ The oil level is correct if the oil is filled to the lower edge of the oil filler hole -1-.

All Vehicles:

– Tighten the new fluid filler plug.

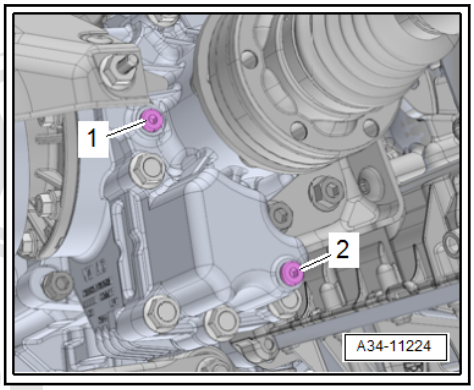
– Carefully remove leaking oil from the bevel box.

– Install the drive axle heat shield. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Drive Axle; Drive Axle Heat Shield, Removing and Installing .

Tightening Specifications

1 - Oil filler hole plug
- 15 Nm
- Replace after removing

2 - Fluid Drain Plug
- 15 Nm
- Replace after removing

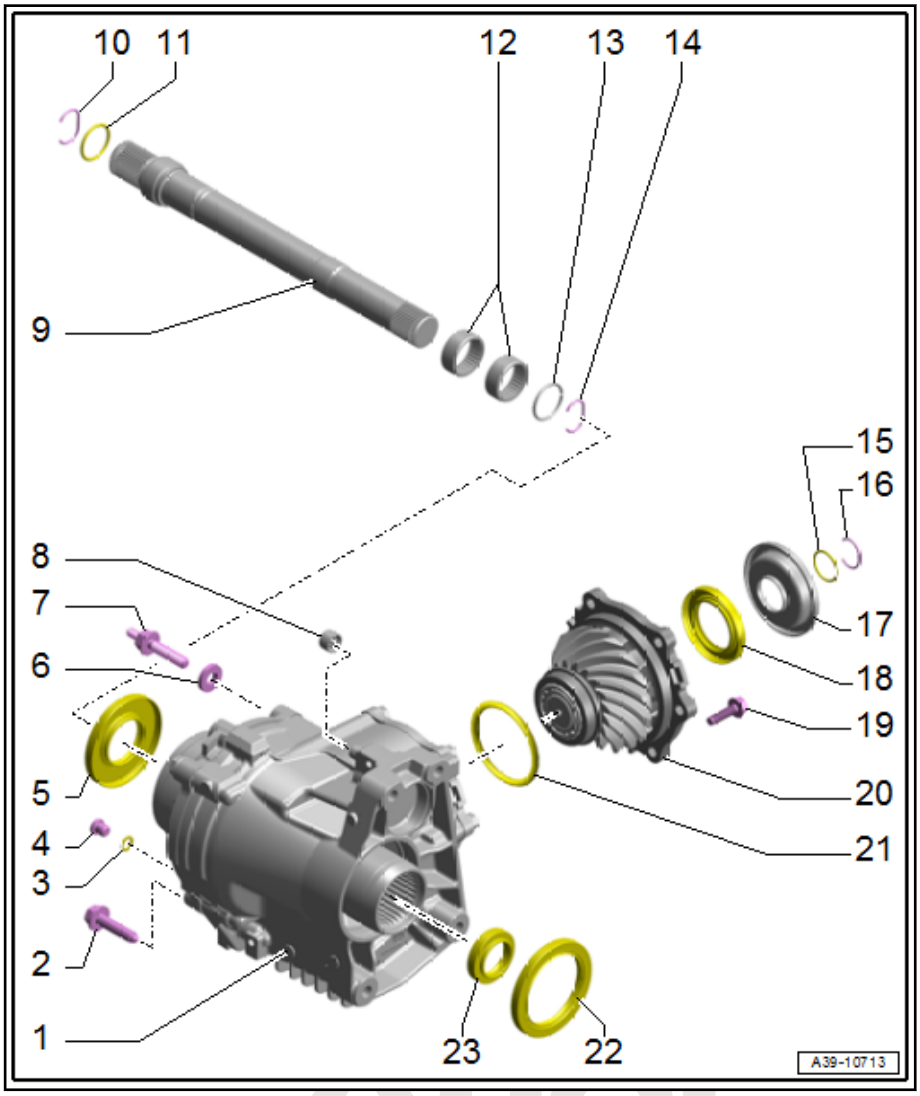


♦ Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .

4 Bevel Box Components

4.1 Overview - Bevel Box Components

4.1.1 Overview - Bevel Box Components 0CP in Audi RS3,TT RS, RS Q3



1 - Bevel Box

- ❑ Removing. Refer to ⇒ “6.1 Bevel Box, Removing”, page 61 .
- ❑ Installing. Refer to ⇒ “6.2 Bevel Box, Installing”, page 64 .

2 - Bolt

- ❑ 40 Nm

3 - Seal

- ❑ For the plug

4 - Plug

- ❑ 15 Nm
- ❑ Replace after removing
- ❑ For the fluid filler or drain plug

5 - Seal

- ❑ For the stub shaft on the right side of the bevel box
- ❑ Replacing. Refer to ⇒ “4.3 Right Seal, Replacing”, page 114 .

6 - Washer

7 - Double Bolt

- ❑ 40 Nm

8 - Bleed Cap

9 - Right Stub Shaft

- ❑ Removing and Installing. Refer to ⇒ “4.5 Right Stub Shaft Needle Bearing (Polygon Bearing), Replacing”, page 128 .

10 - Circlip

- ❑ Replace after removing
- ❑ Insert in the groove all around the stub shaft

11 - O-Ring

- ❑ Replace after removing
- ❑ Insert in the groove all around the stub shaft

12 - Needle Bearing (Polygon Bearing)

- ❑ If it is difficult to move when the right stub shaft is removed, this is not an indication of a fault
- ❑ Acoustic test only when installed
- ❑ Check for damage, for example for cracks on the bearing outer race
- ❑ Replacing. Refer to ⇒ “4.5 Right Stub Shaft Needle Bearing (Polygon Bearing), Replacing”, page 128 .

13 - Circlip

- ❑ Replace after removing
- ❑ Insert in the groove all around the stub shaft

14 - Circlip

- ❑ Replace after removing
- ❑ Insert in the groove all around the stub shaft

15 - O-Ring

- ❑ Replace after removing

16 - Circlip

- ❑ Replace after removing

17 - Dust Protective Cover

18 - Seal

- ❑ For the bevel box output shaft
- ❑ Replacing. Refer to ⇒ “4.4.1 Output Shaft Seal, Replacing, 0CP in Audi RS3, TT RS, RS Q3”, page 116 .

19 - Bolt

- ❑ 38.5 Nm
- ❑ Tighten in a diagonal sequence.

20 - Pinion Housing

- ❑ With shaft bevel gear
- ❑ Carefully install alternating sides
- ❑ Note the fastening holes; the pinion housing fits only in one position

21 - O-Ring

- ❑ Remove the bolts -Item 19- ⇒ Item 19 (page 106) to replace and carefully pry out the pinion housing pinion housing out at the tabs protruding all the way around.

22 - Seal

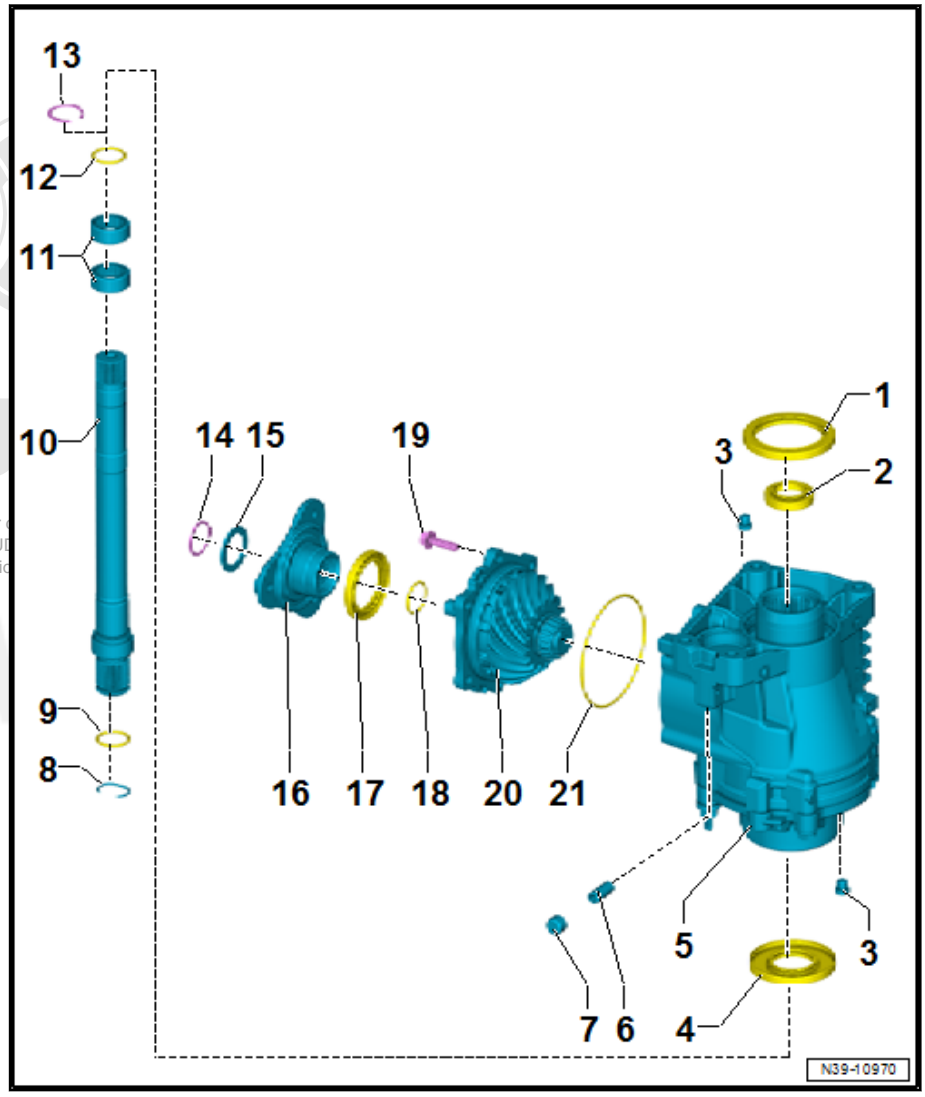
- ❑ Between the transmission and the bevel box, on the bevel box
- ❑ Replacing. Refer to ⇒ “4.2 Left Gaskets, Replacing”, page 110 .

23 - Seal

- ❑ For the stub shaft on the left side of the bevel box

4.1.2 Overview - Bevel Box Components, 0CP in Audi Q3

Characteristics of the bevel box. Refer to ⇒ “1.2 Bevel Box Identification”, page 2 .



1 - Seal

- ❑ Between the bevel box and the transmission
- ❑ Replacing. Refer to ⇒ “4.2 Left Gaskets, Replacing”, page 110 .

2 - Seal

- ❑ For the stub shaft to transmission
- ❑ Replacing. Refer to ⇒ “4.2 Left Gaskets, Replacing”, page 110 .

3 - Plug

- ❑ 15 Nm
- ❑ Replace after removing
- ❑ With permanent seal

4 - Seal

- ❑ For the stub shaft to drive axle
- ❑ Replacing. Refer to ⇒ “4.3 Right Seal, Replacing”, page 114 .

5 - Bevel Box

- ❑ Removing and Installing. Refer to ⇒ “6.1 Bevel Box, Removing”, page 61 .

6 - Bleed Pipe

- ❑ For bleeding the bevel box
- ❑ Press it in all the way

7 - Cap

- ❑ For bleeding the bevel box

8 - Circlip

- ❑ Replace after removing
- ❑ Insert in the groove all around the stub shaft

9 - O-Ring

- ❑ Replace after removing
- ❑ Insert in the groove all around the stub shaft

10 - Stub Shaft

- ❑ Removing and Installing. Refer to ⇒ “4.5 Right Stub Shaft Needle Bearing (Polygon Bearing), Replacing”, page 128 .

11 - Needle Bearing (Polygon Bearing)

- ❑ The needle bearings (polygon bearings) are difficult to move when the stub shaft is removed. Difficulty in movement is not an indication of faulty bearings. An acoustic test can only be performed while installed.
- ❑ Check for damage on the bearing, for example, cracks on outer race and replace if necessary.
- ❑ Replacing. Refer to ⇒ “4.5 Right Stub Shaft Needle Bearing (Polygon Bearing), Replacing”, page 128 .

12 - Circlip

- ❑ Replace after removing.
- ❑ For the needle bearing (polygon bearing)
- ❑ Insert in the groove all around the stub shaft

13 - Circlip

- ❑ Replace after removing
- ❑ Insert in the groove all around the stub shaft

14 - Circlip

- ❑ Replace after removing.
- ❑ For the output flange
- ❑ Removing and Installing. Refer to ⇒ “4.4.2 Output Flange Seal, Replacing, 0CP in Audi Q3”, page 119 .

15 - Washer

- ❑ For the output flange

16 - Output Flange

- ❑ Removing and Installing. Refer to ⇒ “4.4.2 Output Flange Seal, Replacing, 0CP in Audi Q3”, page 119 .

17 - Seal

- ❑ Replace after removal of the output flange
- ❑ For the output flange
- ❑ Replacing. Refer to ⇒ “4.4.2 Output Flange Seal, Replacing, 0CP in Audi Q3”, page 119 .

18 - O-Ring

- ❑ Replace after removal of the output flange
- ❑ For the output flange
- ❑ Replacing. Refer to ⇒ “4.4.2 Output Flange Seal, Replacing, 0CP in Audi Q3”, page 119 .

19 - Bolt

- ❑ 38 Nm

20 - Pinion Housing

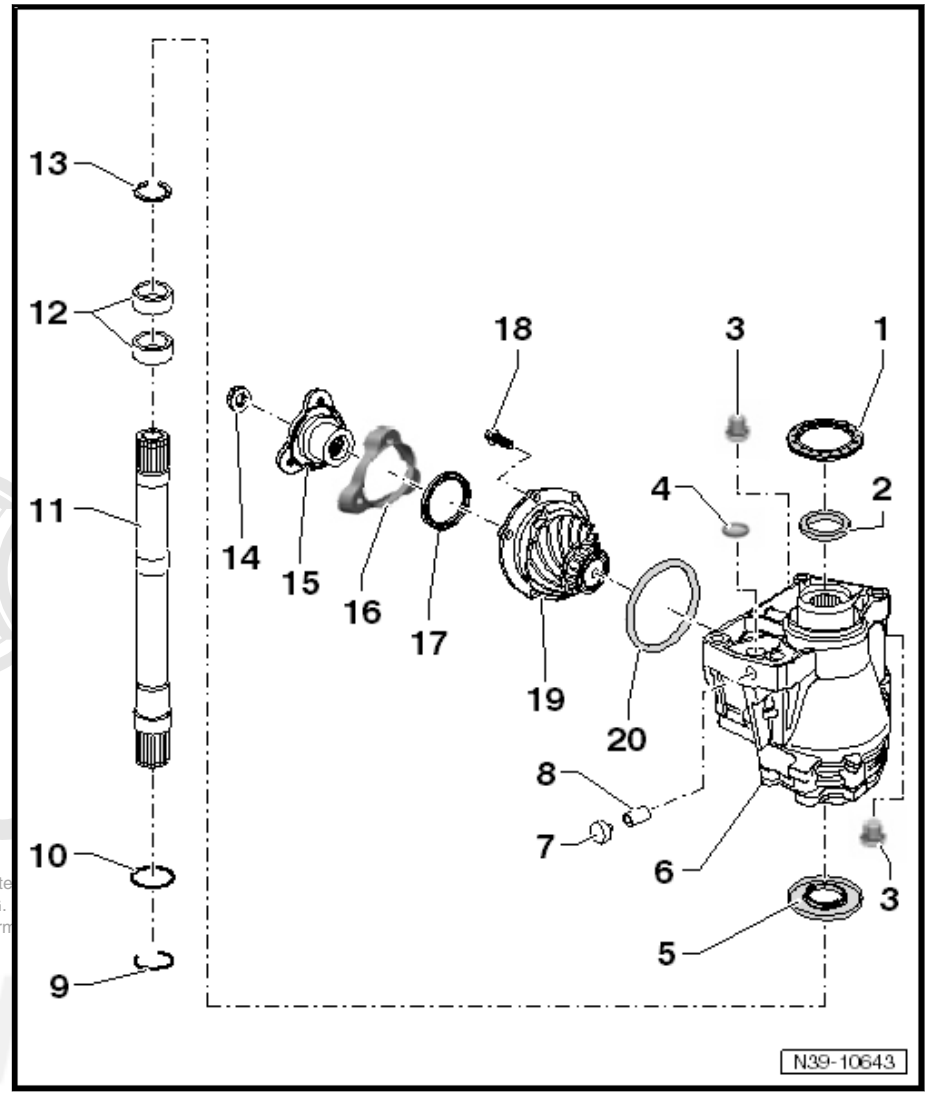
- ❑ With shaft bevel gear and inner race/tapered roller bearing
- ❑ Components are not replacement parts
- ❑ Carefully pry out from side to side
- ❑ Note the fastening holes; the pinion housing only fits in one position.

21 - O-Ring

- ❑ Replace after removing the pinion housing
- ❑ To replace, remove the bolts and carefully pry the pinion housing out at the tabs protruding all the way around.
- ❑ Do not remove the output flange

4.1.3 Overview - Bevel Box Components, 0A6 in Audi Q3

Characteristics of the bevel box. Refer to ⇒ “1.2 Bevel Box Identification”, page 2 .



1 - Seal

- ❑ Between the bevel box and the transmission
- ❑ Replacing. Refer to ⇒ “4.2 Left Gaskets, Replacing”, page 110 .

2 - Seal

- ❑ For the stub shaft to transmission
- ❑ Replacing. Refer to ⇒ “4.2 Left Gaskets, Replacing”, page 110 .

3 - Plug

- ❑ 15 Nm
- ❑ Replace after removing
- ❑ With permanent seal

4 - Cap

- ❑ Drive in all the way using the spacer tube from the Holding Fixture - Spacers - VW540/1B-

5 - Seal

- ❑ For the stub shaft to drive axle
- ❑ The gasket can be replaced with the bevel box installed
- ❑ Replacing. Refer to ⇒ “4.3 Right Seal, Replacing”, page 114 .

6 - Bevel Box

- ❑ Removing and Installing. Refer to ⇒ “6 Bevel Box”, page 61 .

7 - Cap

- ❑ For bleeding the bevel box

8 - Bleed Pipe

- ❑ For bleeding the bevel box
- ❑ Press it in all the way

9 - Circlip

- ❑ Replace after removing
- ❑ Insert in the groove all around the stub shaft

10 - O-Ring

- ❑ Replace after removing
- ❑ Insert in the groove all around the stub shaft

11 - Stub Shaft

- ❑ Remove the bevel box to remove and install. Refer to ⇒ “6.1 Bevel Box, Removing”, page 61 .
- ❑ Removing and Installing. Refer to ⇒ “4.5 Right Stub Shaft Needle Bearing (Polygon Bearing), Replacing”, page 128 .

12 - Needle Bearing (Polygon Bearing)

- ❑ The needle bearings (polygon bearings) are difficult to move when the stub shaft is removed. Difficulty in movement is not an indication of faulty bearings. An acoustic test can only be performed while installed.

- ❑ Check for damage on the bearing, for example, cracks on outer race and replace if necessary.
- ❑ Replacing. Refer to ⇒ “4.5 Right Stub Shaft Needle Bearing (Polygon Bearing), Replacing”, page 128 .

13 - Circlip

- ❑ Replace after removing.
- ❑ For the needle bearing (polygon bearing)
- ❑ Insert in the groove all around the stub shaft

14 - Nut

- ❑ Replace after removing.
- ❑ Removing. Refer to ⇒ Fig. ““Remove Hex Nut for the Output Flange.”“ , page 126 .
- ❑ Install with Locking Fluid - D 000 600- .
- ❑ Installing. Refer to ⇒ Fig. ““Coat the Threads of New Hex Nut with Locking Fluid D 000 600.”“ , page 127 .
- ❑ 480 Nm

15 - Output Flange

- ❑ Removing and Installing. Refer to ⇒ “4.4.3 Output Flange Seal, Replacing, 0A6 in Audi Q3”, page 124 .

16 - Cap

- ❑ Not equipped on all bevel boxes
- ❑ Replace the output flange after removal if damaged
- ❑ Lock with the output flange

17 - Seal

- ❑ Replace after removing
- ❑ For the output flange
- ❑ Remove to replace the bevel box. Refer to ⇒ “6.1 Bevel Box, Removing”, page 61 .

18 - Bolt

- ❑ 25 Nm
- ❑ Tighten in a diagonal sequence

19 - Pinion Housing

- ❑ With shaft bevel gear and inner race/tapered roller bearing
- ❑ Components are not replacement parts
- ❑ Carefully pry out from side to side
- ❑ Note the fastening holes; the pinion housing only fits in one position.

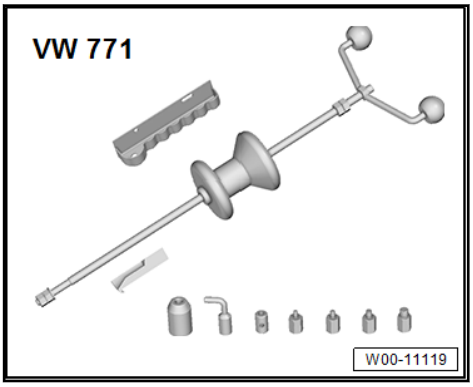
20 - O-Ring

- ❑ Replace after removing the pinion housing
- ❑ To replace, remove the bolts -Item 18- ⇒ Item 18 (page 110) and carefully pry the pinion housing out at the tabs protruding all the way around.
- ❑ Do not remove the hex nut -Item 14- ⇒ Item 14 (page 110) and output flange -Item 15- ⇒ Item 15 (page 110) .

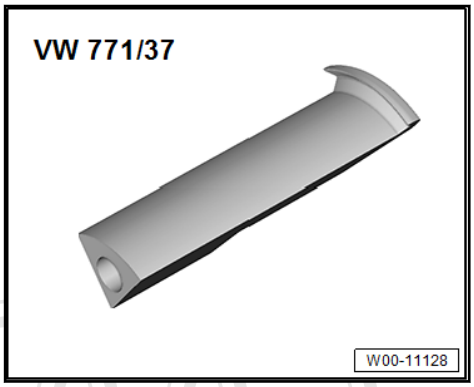
4.2 Left Gaskets, Replacing

Special tools and workshop equipment required

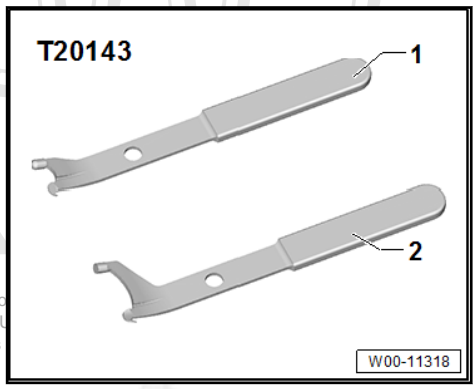
- Slide Hammer Set - VW771-



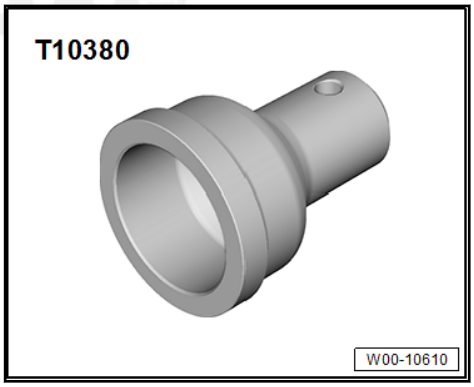
- Slide Hammer Set - Hook - VW771/37-



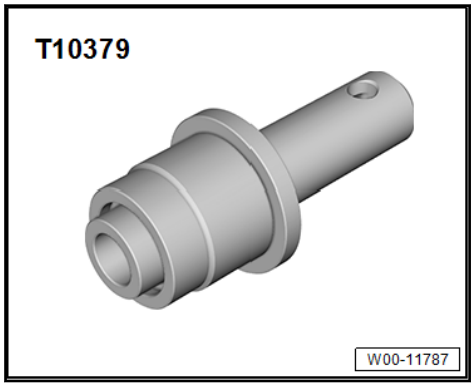
- Puller - Crankshaft/Power Steering Seal - T20143-



- Seal Installer - Hollow Shaft - T10380-



- Seal Installer - Stub Shaft - T10379-



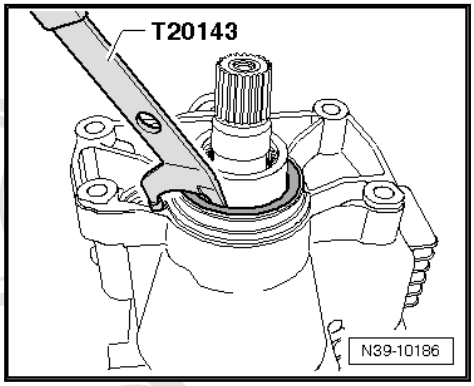
Always Replace Both Seals.

Removing

– Remove the bevel box. Refer to ⇒ “6.1 Bevel Box, Removing”, page 61 .

Outer Seal, Removing

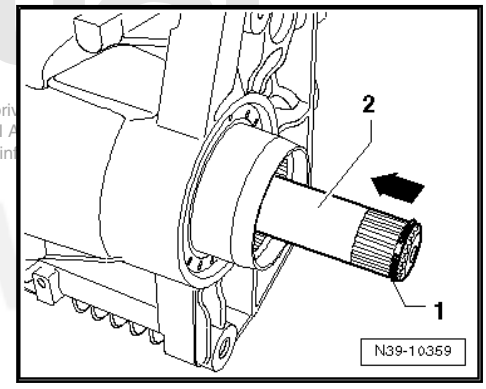
– Pry out the seal using the Puller - Crankshaft/Power Steering Seal - T20143/2-



Inner Seal, Removing

– Remove the circlip -1- from the stub shaft.

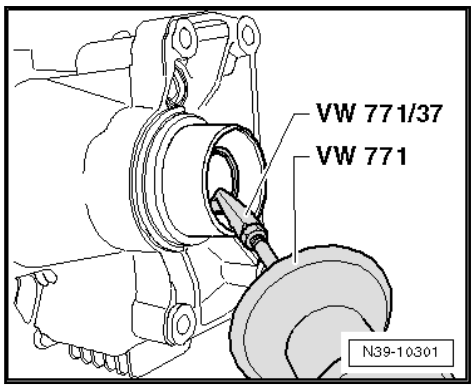
– Carefully remove the stub shaft -2- using a plastic hammer in the direction of the arrow.



– Remove the stub shaft seal on the transmission side.

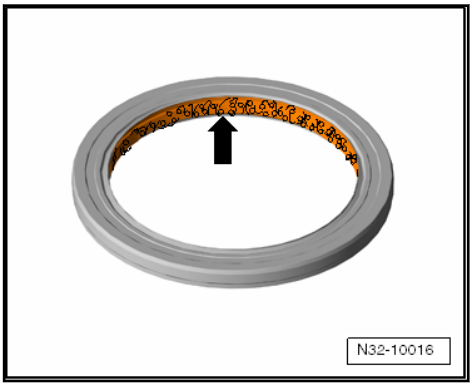
Installing

Outer Seal, Installing



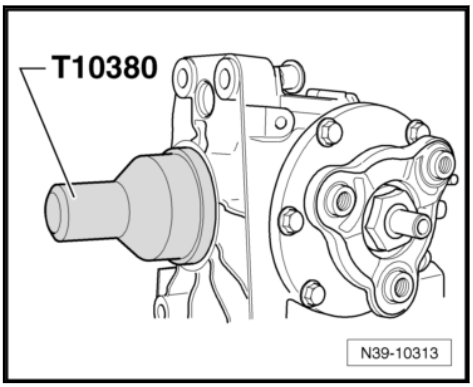
– Fill the space between the sealing and dust lip -arrow- halfway with Sealing Grease - G 052 128 A1- on the new seal.

– Lightly oil the outer edge of the new seal.



– install the seal.

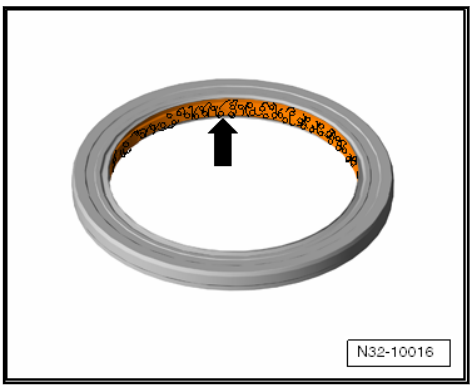
• Dimension = 5.8 mm to 6.0 mm from the edge.



Inner Seal, Installing

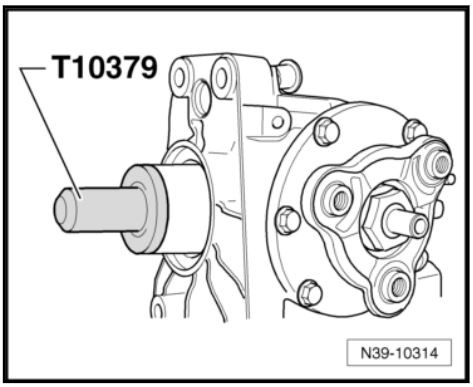
– Fill the space between the sealing and dust lip -arrow- halfway with Sealing Grease - G 052 128 A1- on the new seal.

– Lightly oil the outer edge of the new seal.

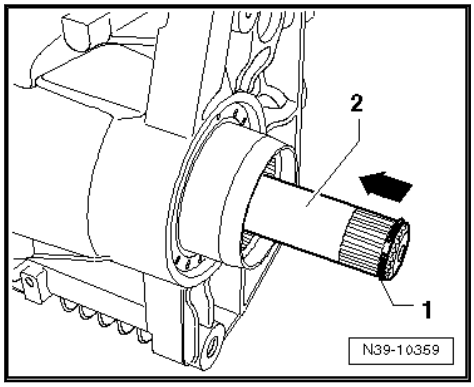


– Install the gasket all the way.

– Carefully drive the stub shaft in as far as the stop using a plastic hammer.



– Install a new circlip -1- on the stub shaft.
– Install the bevel box. Refer to ⇒ “6.2 Bevel Box, Installing”, page 64 .
– Check the gear oil in the bevel box. Refer to ⇒ “3.1 Gear Oil, Checking Level”, page 98 .

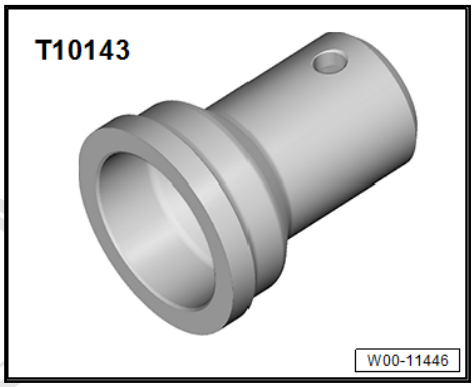


4.3 Right Seal, Replacing

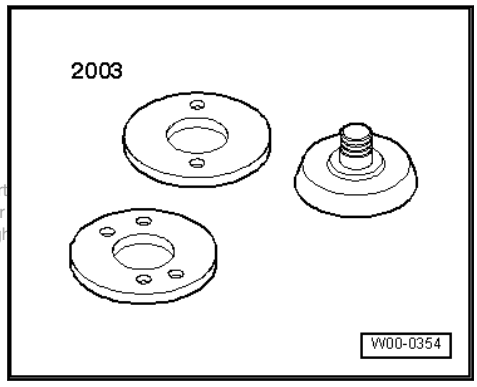
Special tools and workshop equipment required

♦ Used Oil Collection and Extraction Unit - SMN372500-

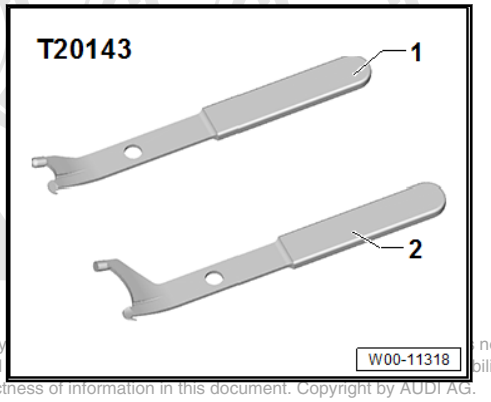
♦ Seal Installer - Drive Flange - T10143-



♦ Seal Installer - Flywheel Oil Seal Kit - Press Sleeve - 2003/1-



- Puller - Crankshaft/Power Steering Seal - T20143-



- Sealing Grease - G 052 128 A1-
- Grease for stub shaft splines. Refer to ⇒ Electronic Parts Catalog (ETKA) .

Procedure

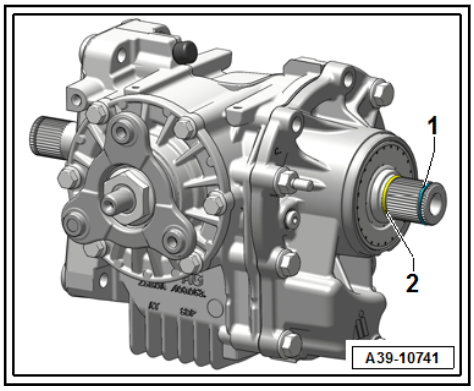
- Pay attention to ⇒ “4 Repair Information”, page 6 .
- Pay attention to ⇒ “4.2 Guidelines for Clean Working Conditions”, page 7 .

• Bevel box is installed.

– Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Noise Insulation, Removing and Installing .

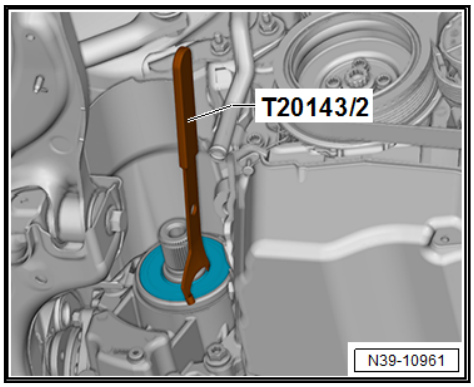
– Remove the right drive axle. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Drive Axle; Drive Axle, Removing and Installing .

– Remove the circlip -1- and O-ring -2- from the stub shaft.

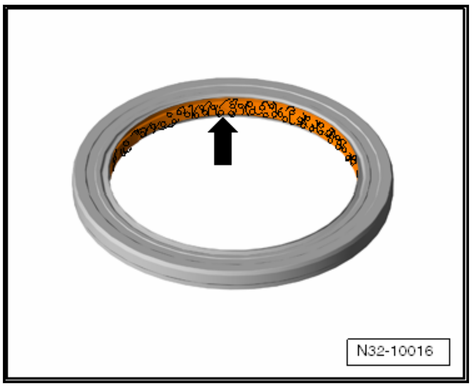


– Place the Used Oil Collection and Extraction Unit - SMN372500- under the bevel box.

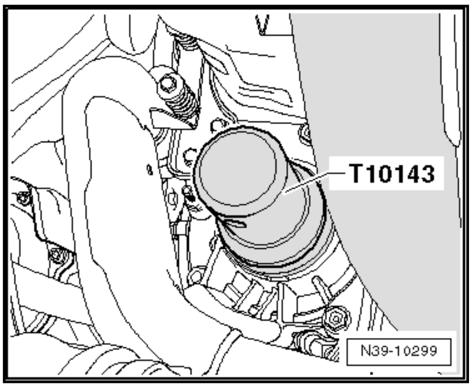
– Pry out sealing ring.



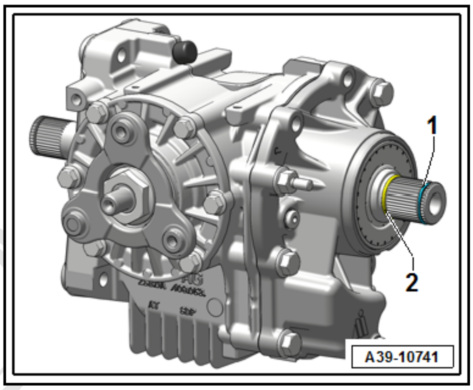
– Coat the outer circumference of the new seal with transmission fluid.
– Fill the space between the sealing/dust lip -arrow- halfway with Sealing Grease - G 052 128 A1- .
– Place the washer from the Seal Installer - Flywheel Oil Seal Kit - Press Sleeve - 2003/1- on the seal.



– Drive in the seal flush using the Seal Installer - Drive Flange - T10143- . Do not tilt the seal.



– Install a new circlip -1- and new O-ring -2-.
– Grease the splines on the stub shaft.
– Check the gear oil level and fill. Refer to ⇒ “3.1 Gear Oil, Checking Level”, page 98 .



Tightening Specifications

- Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Drive Axle; Overview - Drive Axle .
- Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .

4.4 Output Flange Seal, Replacing

⇒ “4.4.1 Output Shaft Seal, Replacing, 0CP in Audi RS3, TT RS, RS Q3”, page 116

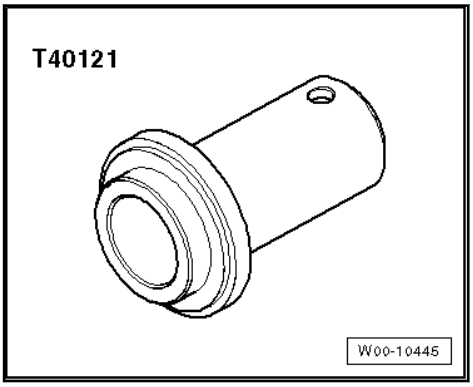
⇒ “4.4.2 Output Flange Seal, Replacing, 0CP in Audi Q3”, page 119

⇒ “4.4.3 Output Flange Seal, Replacing, 0A6 in Audi Q3”, page 124

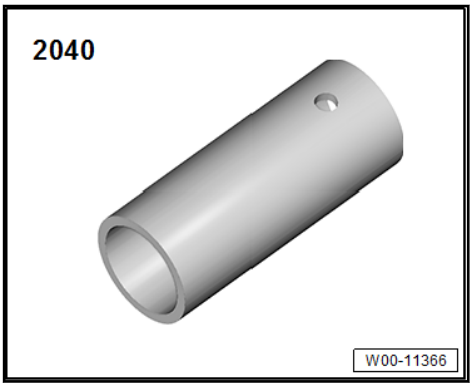
4.4.1 Output Shaft Seal, Replacing, 0CP in Audi RS3, TT RS, RS Q3

Special tools and workshop equipment required

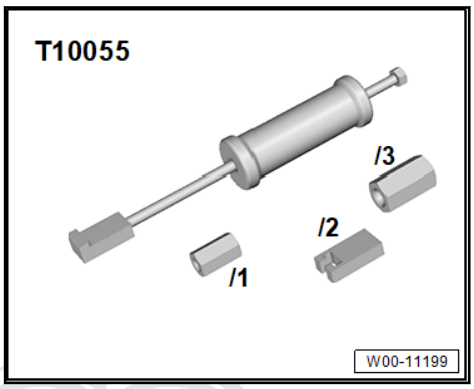
- Seal Installer - Side Shaft - T40121-



- Press Piece - Front Control Arm - 2040-



- Puller - Unit Injector - T10055-



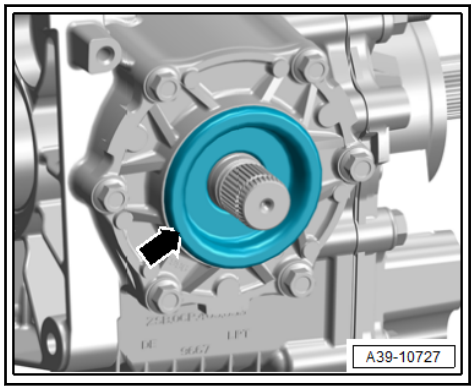
- Commercially available drill
- Commercially available metal drill bit, 2 to 4 mm
- Bolt approximately 4 mm diameter
- Sealing Grease - G 052 128 A1-

Procedure

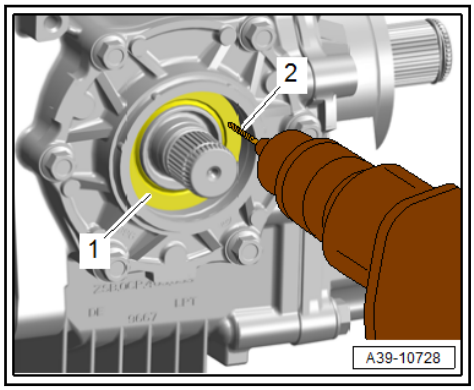
– Drain the gear oil from the bevel box. Refer to ⇒ “3.2 Gear Oil, Draining and Filling”, page 99 .

– Remove the driveshaft. Refer to ⇒ Rear Final Drive; Rep. Gr. 39 ; Driveshaft; Driveshaft, Removing and Installing .

– Place two screwdrivers on the edge and pry out the dust protector -arrow-.



– Grease the drill bit -2- so that the shavings stick to it.



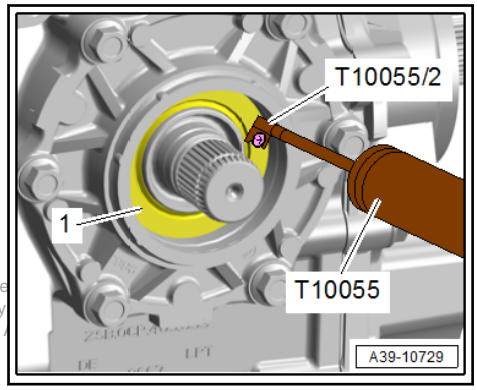
NOTICE

Risk of damaging the bearing when drilling.

- **Only drill through the metal ring of the shaft seal.**
- **Do not install the screw too deep.**

– Carefully drill a 2 to 4 mm hole into the outer metal ring -1- of the seal.

– Install a bolt (approximately 4 mm diameter) into the drilled out hole on the seal.



– Remove the seal with the Puller - Unit Injector - T10055- with the Puller - Unit Injector - Adapter 2 - T10055/2- .

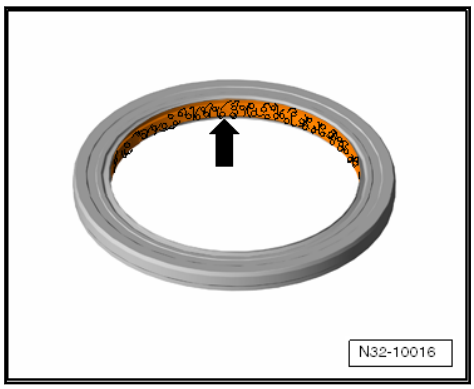
– Shavings must not get into the pinion housing. Vacuum up any shavings if necessary.

– Carefully remove the cloth. At the same time pay attention that no shavings get into the pinion housing.

– Carefully clean the bevel box and the opening for the seal.

• If only metal ring from the seal could be removed, carefully pry out remaining seal using screwdriver.

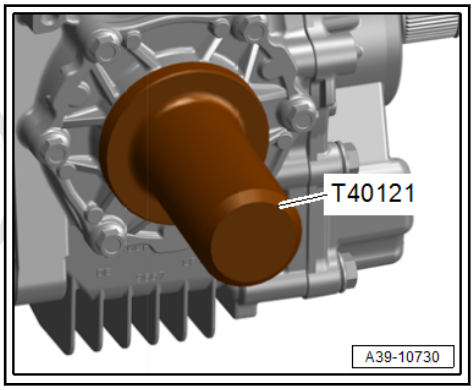
– Coat the outer circumference of the new seal with transmission fluid.



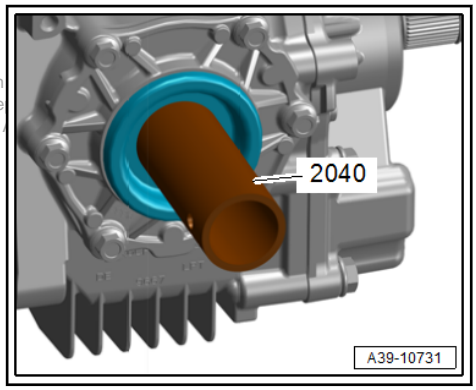
– Fill the space between the sealing/dust lip halfway with Sealing Grease - G 052 128 A1- .

– Place the seal carefully on the shaft and pay attention that the inner sealing lip does not fold over.

– Use the Seal Installer - Side Shaft - T40121- to drive the seal all the way in.



– Drive in the new dust protector using the Press Piece - Front Control Arm - 2040- .

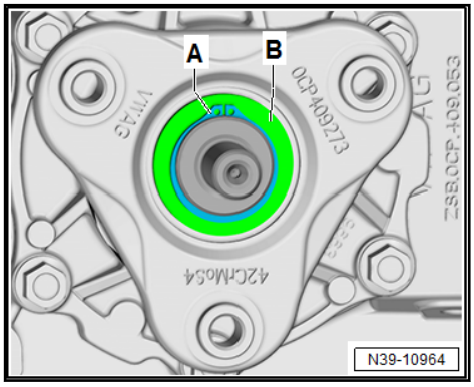


– Fill the gear oil. Refer to ⇒ "3.2 Gear Oil, Draining and Filling", page 99 .

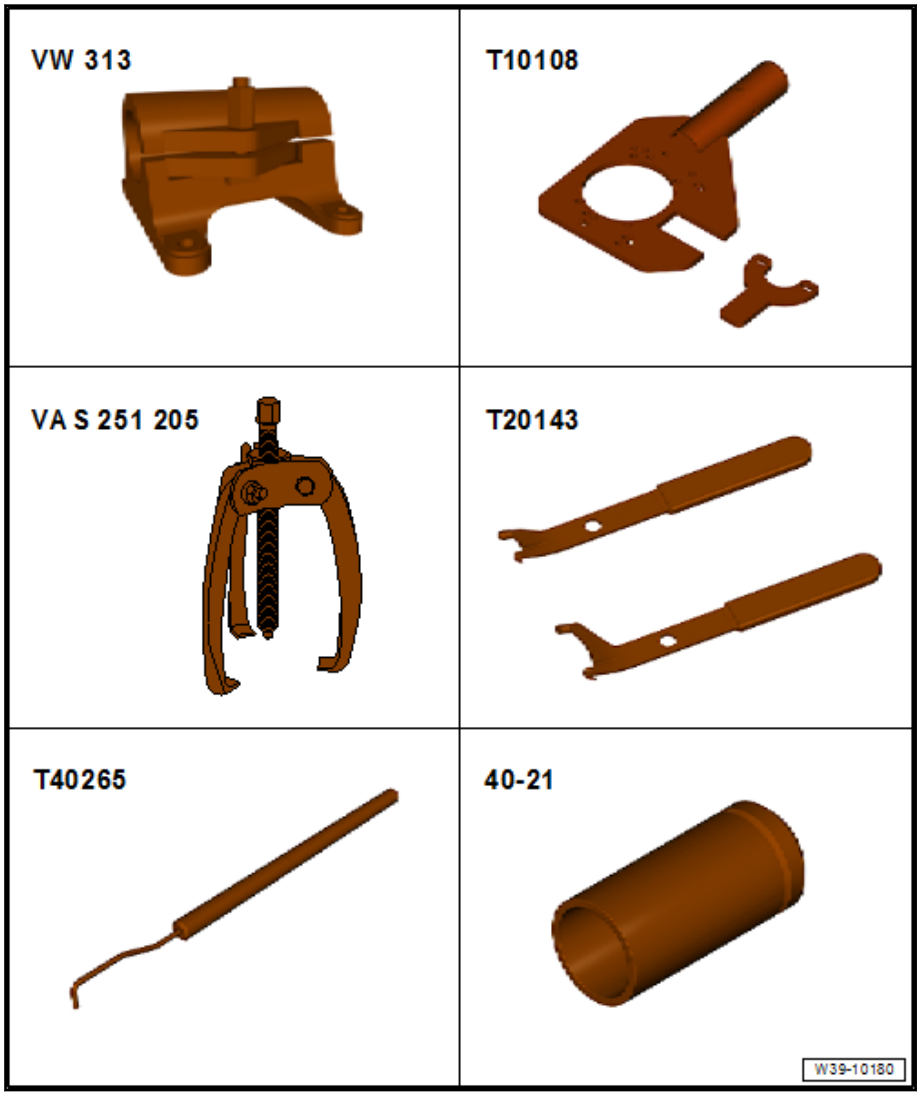
4.4.2 Output Flange Seal, Replacing, 0CP in Audi Q3

The output flange is secured with an output flange -A-.

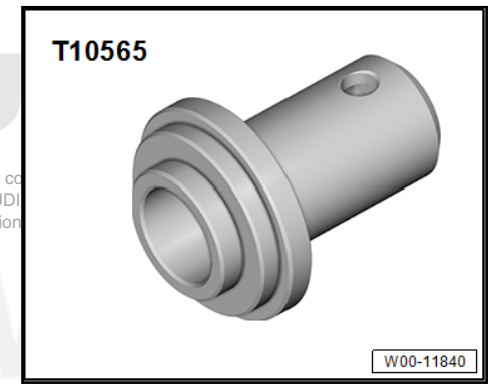
A washer -B- is located behind the circlip -A-.



Special tools and workshop equipment required



- Holding Fixture - VW313-
- Gearbox Support - T10108-
- Three-Arm Puller (Kukko 45/2) - VAS251205- , or for example Three-Arm Puller - Kukko 45-2-
- Puller - Crankshaft/Power Steering Seal - T20143-
- Chain Tensioner Locking Tool - T40265-
- Bearing Installer - Differential Bearing - 40-21-
- Thrust Piece - T10565-



- ♦ Shop Crane - Drip Tray - VAS6208-
- ♦ Sealing Grease - G 052 128 A1-
- ♦ Universal Grease
- ♦ Refer to the ⇒ Electronic Parts Catalog (ETKA) for the grease allocation.
- ♦ M10 x 30 bolts (quantity: 2)
- ♦ M12 x 10 nuts (quantity: 4)

– Remove the bevel box. Refer to ⇒ “6.1 Bevel Box, Removing”, page 61 .

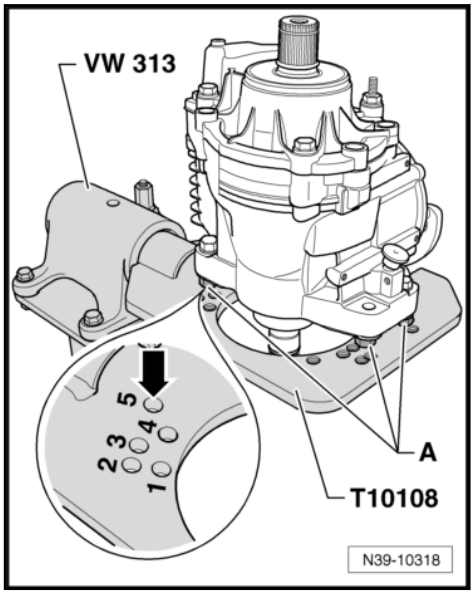
– Mount the bevel box on the hole marked with the number -5- -arrow- in the Gearbox Support - T10108- .

A - Insert the M12 x 10 nut (quantity: 4) between bevel box and Transmission Holder . The nuts act as spacers.

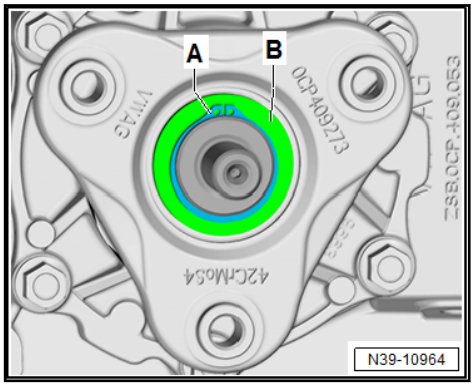
– Align the bevel box to the hole that is opposite it and secure.

– Place a drip tray underneath.

– Drain the transmission fluid from the bevel box.



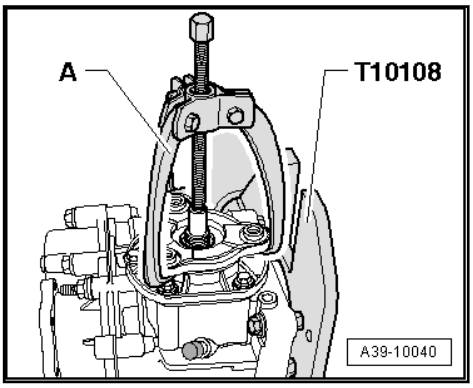
– Remove the circlip -A- and the washer -B-.



– Pivot the bevel box so that the output flange faces upward.

– Remove the output flange from the bevel box shaft bevel gear.

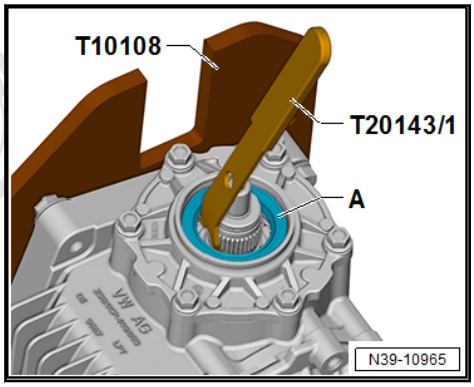
A - Three-Arm Puller (Kukko 45/2) - VAS251205- , or for example Three-Arm Puller - Kukko 45-2-



– Pry out the output shaft seal -A-.

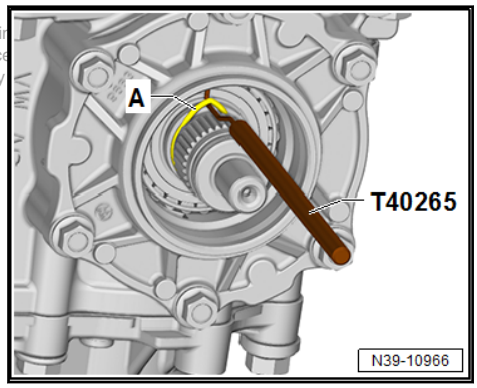
• The seal in the housing must not be damaged.

– Clean the area around the shaft bevel gear of seal residue.



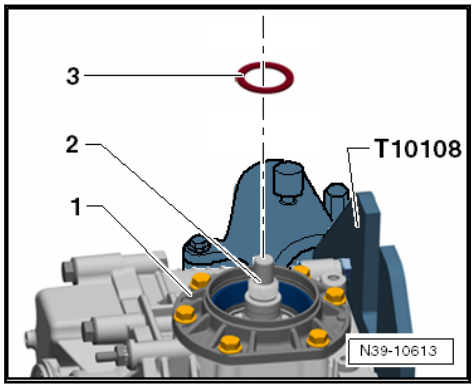
– Remove the O-ring -A- from the shaft.

– The O-ring -A- can also be removed from the shaft using a small screwdriver.

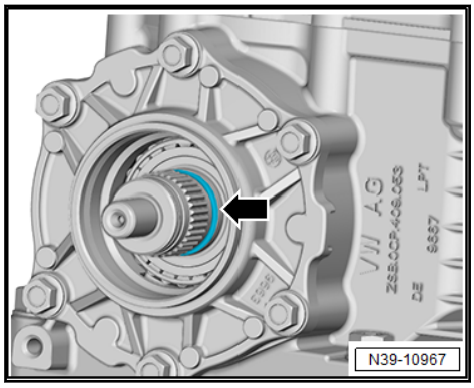


Installing

– Install the new O-ring -3- on the shaft/shaft bevel gear -2- in the pinion housing -1-.

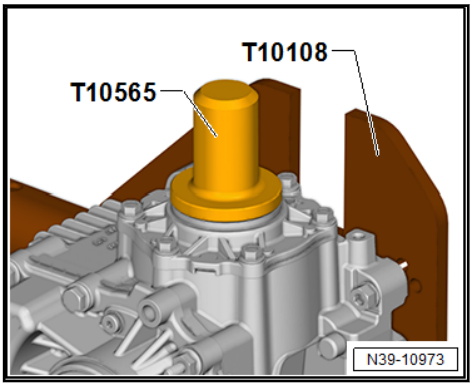


• The O-ring must be located behind the splines in the bottom of the surrounding groove -arrow-.



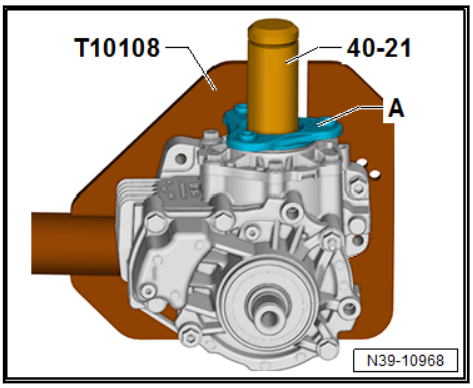
– Install the new seal all the way.

– Fill the space between the sealing lip and the dust lip halfway with Sealing Grease - G 052 128 A1- .



– Lightly apply Universal Grease to the output flange splines -A-.

– Drive in the output flange -A- carefully using a plastic mallet on the shaft.

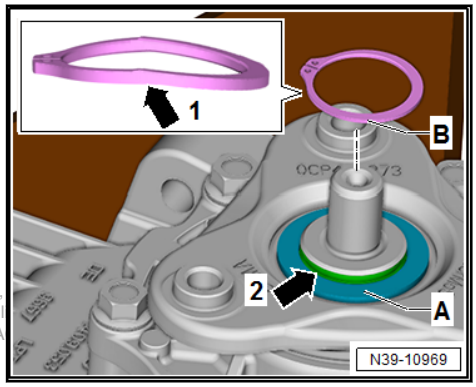


– Install the washer -A-.

– Secure the output flange using the circlip -B-.

– The circlip -B- has an uneven shape -arrow 1-.

• The circlip -B- must be located in the base of the surrounding groove -arrow 2-.



Radial Run-Out on Output Flange/Shaft Bevel Gear, Measuring

– Secure the measuring tools to bevel box with bolt -A- (M8 x 25).

– Position the Dial Indicator - VAS6080A- on the shaft bevel gear alignment pin -B- and set it to “0” with 1 mm pre-tension.

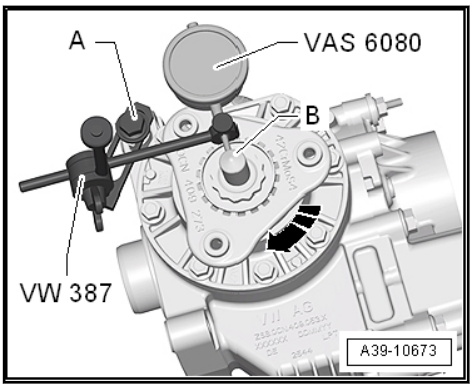
– Turn the output flange one complete rotation in direction of -arrow-.

– Read the measured value on the dial gauge.

• Maximum radial run-out = 0.07 mm.

– Install the bevel box. Refer to ⇒ “6.2 Bevel Box, Installing”, page 64 .

– Check the level of the gear oil inside the bevel box. Refer to ⇒ “3.1 Gear Oil, Checking Level”, page 98 .



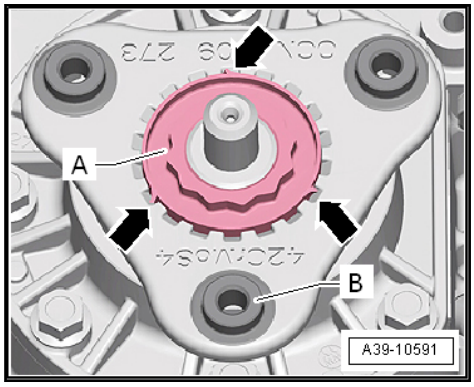
Tightening Specifications

♦ Refer to ⇒ “4.1.2 Overview - Bevel Box Components, 0CP in Audi Q3”, page 106

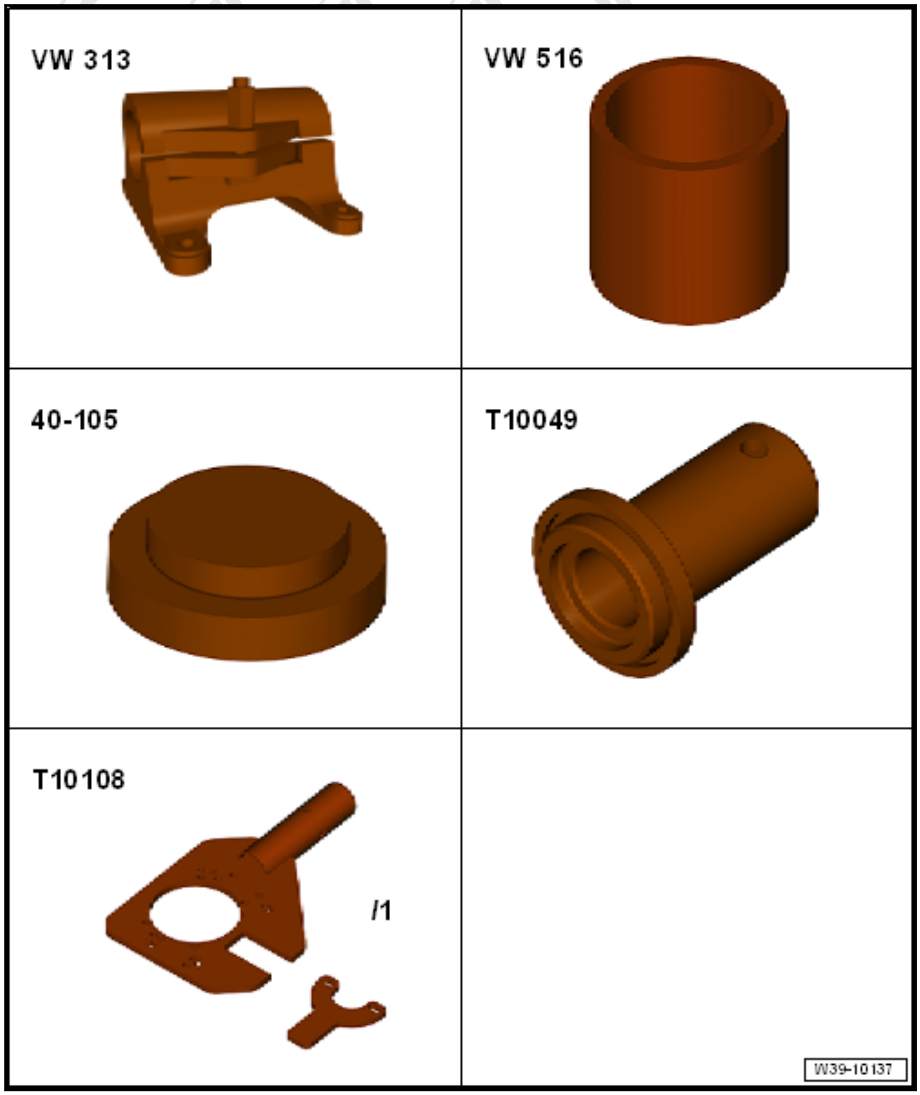
4.4.3 Output Flange Seal, Replacing, 0A6 in Audi Q3

The output flange is secured with a hex nut -A-.

Illustration can differ.

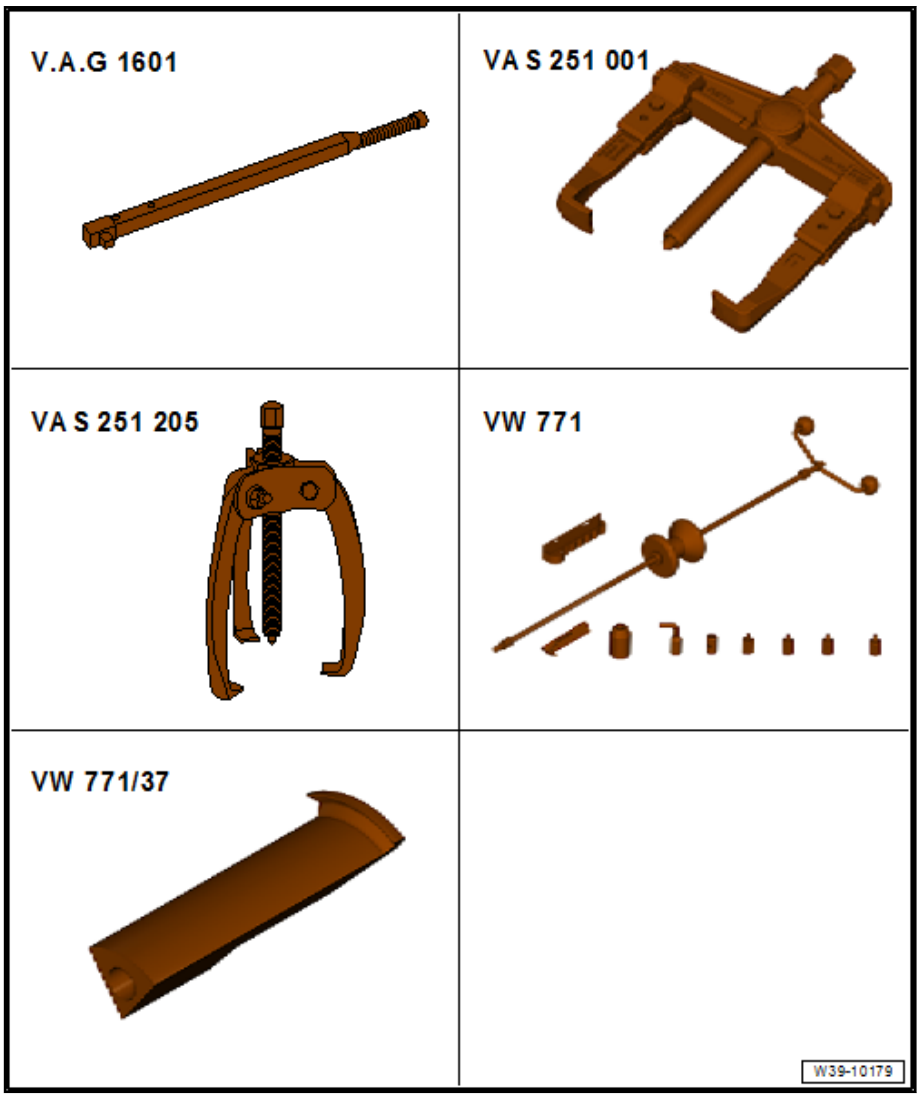


Special tools and workshop equipment required



- Holding Fixture - VW313-
- Press Piece - 42mm - VW516-
- Press Piece - Multiple Use - 40-105-
- Seal Installer - Flange Shaft - T10049-

- Gearbox Support - T10108-
- Gearbox Support - T10108/1-



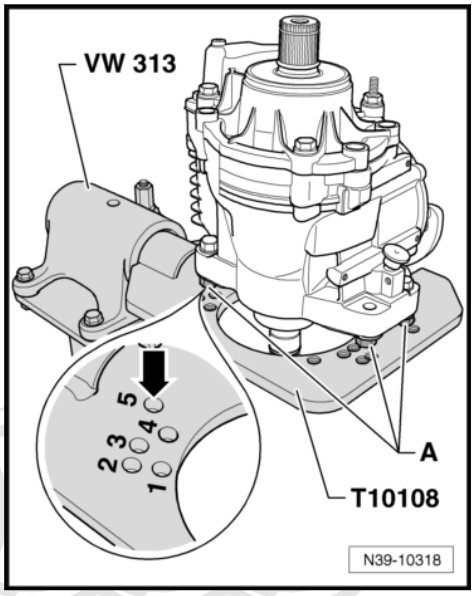
- Torque Wrench 1601 - VAG1601-
- Two-Arm Puller - VAS251001- , or for example Two-Arm Puller - Kukko 20/10-
- Three-Arm Puller (Kukko 45/2) - VAS251205- , or for example Three-Arm Puller - Kukko 45-2-
- Slide Hammer Set - VW771-
- Slide Hammer Set - Hook - VW771/37-
- Sealing Grease - G 052 128 A1-
- Universal Grease
- Refer to the ⇒ Electronic Parts Catalog (ETKA) for the grease allocation.
- Two M10 x 30 bolts
- Four M12 x 10 nuts

– Remove the bevel box. Refer to ⇒ “6.1 Bevel Box, Removing”, page 61 .

– Mount the bevel box on the hole marked with the number -5- -arrow- in the Gearbox Support - T10108- .

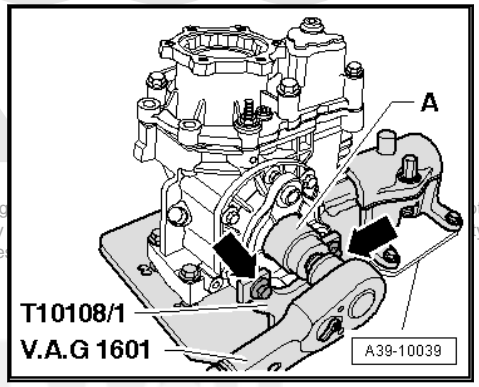
A - Insert the M12 x 10 nut (quantity: 4) between bevel box and Transmission Holder . The nuts act as spacers.

– Align the bevel box to the hole that is opposite it and secure.
– Place a drip tray underneath.
– Drain the transmission fluid from the bevel box.
– Secure the bevel box output flange using the Gearbox Support - Component 1 - T10108/1- . To do so install the M10 x 30 bolts -arrows-.



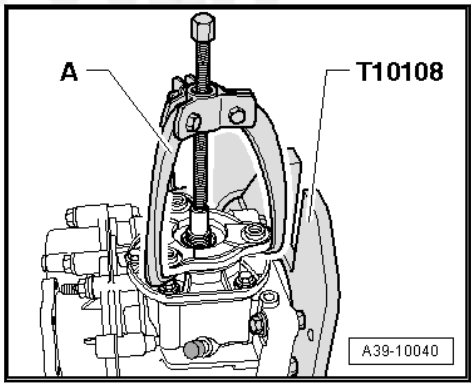
Remove Hex Nut for the Output Flange.

A - 36 mm Socket for 3/4 Inch Drive

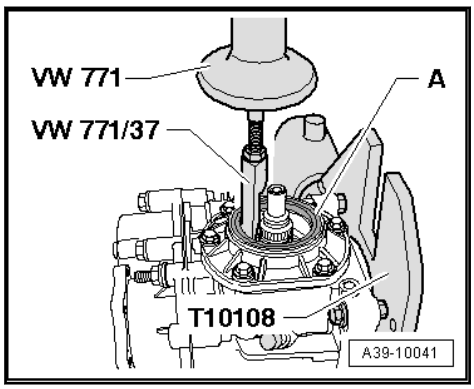


– Pivot the bevel box so that the output flange faces upward.
– Remove the output flange from the bevel box shaft bevel gear.

A - Three-Arm Puller (Kukko 45/2) - VAS251205- , or for example Three-Arm Puller - Kukko 45-2-



– Remove the output shaft seal -A-.
– Clean any remaining locking fluid from the thread on the shaft bevel gear.
– Clean the area around the shaft bevel gear of seal residue.

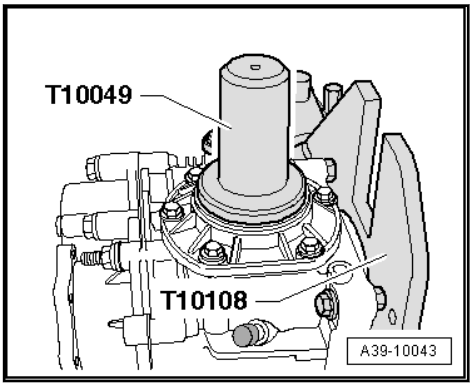


Installing

– Drive the new seal in all the way using the Seal Installer - Flange Shaft - T10049- .

– Fill the space between the sealing lip and the dust lip halfway with Sealing Grease - G 052 128 A1- .

– Lightly apply Universal Grease to the output flange splines.

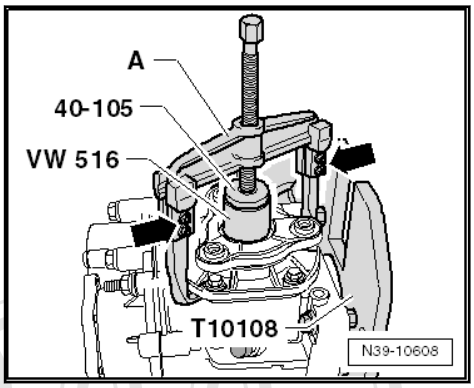


– Install the output flange using the Two-Arm Puller - VAS251001- -A-.

A - Two-Arm Puller - VAS251001- , or for example Two-Arm Puller - Kukko 20/10-

Note the following:

- Use a new removal hook.
- To not tilt the output flange.
- Mount the hooks on the bottom of the pinion housing.
- Tension the removal hook with the Two-Arm Puller - VAS251001- -arrows-.
- Do not bend the removal hook outward.
- Interrupt the procedure if necessary, remove the output flange again and repeat the process.

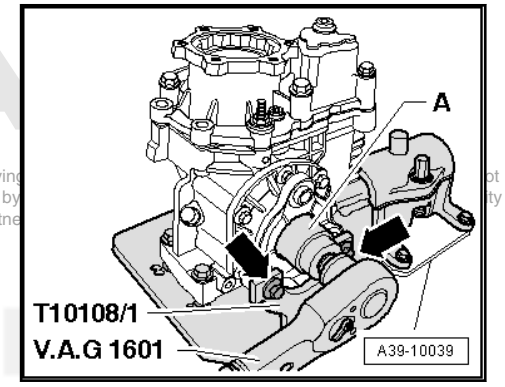


Coat the Threads of New Hex Nut with Locking Fluid D 000 600.

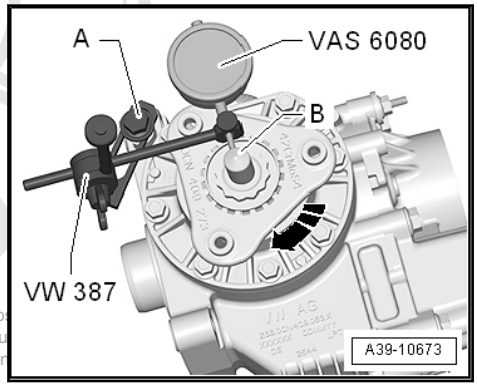
– Tighten the new output flange hex nut to the tightening specification.

Tightening Specification. Refer to -Item 14- ⇒ Item 14 (page 110) .

A - SW 36 Socket for 3/4 Inch Drive



Radial Run-Out on Output Flange/Shaft Bevel Gear, Measuring



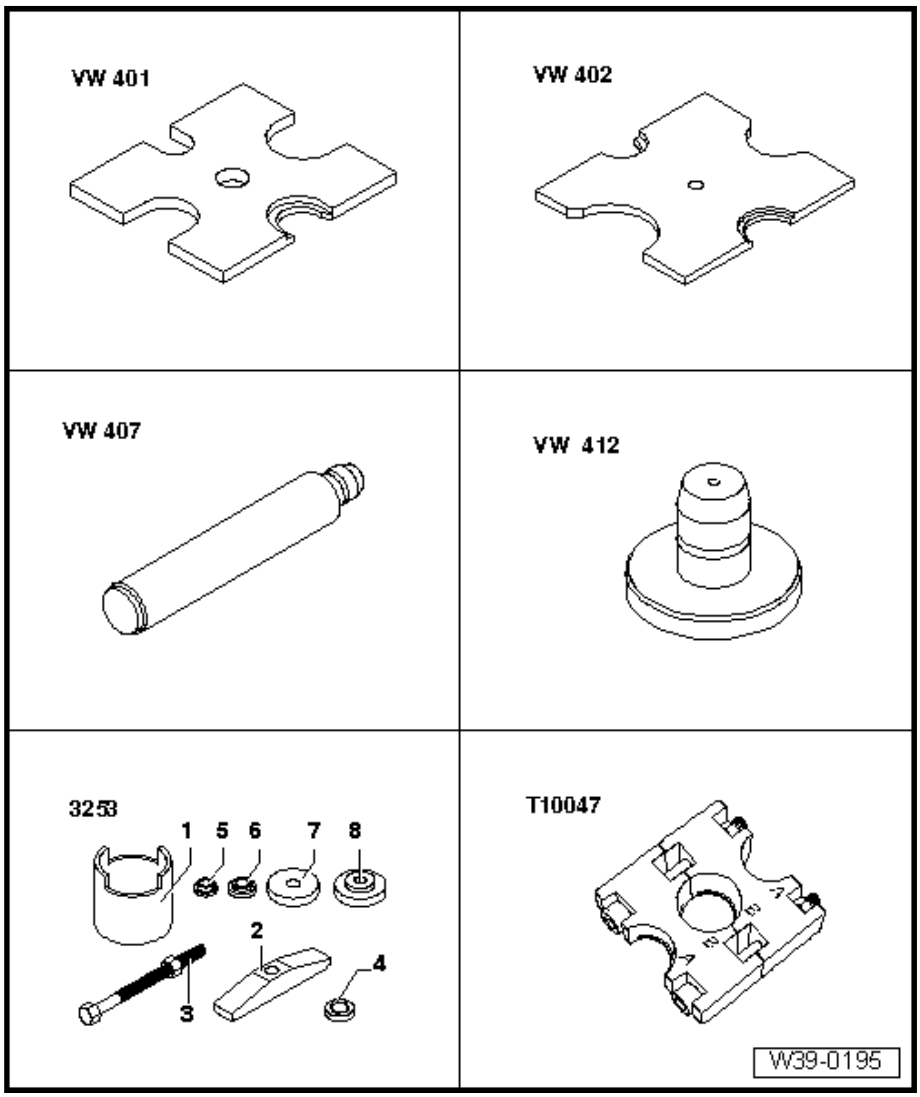
- Secure the measuring tools to bevel box with bolt -A- (M8 x 25).
- Position the Dial Indicator - VAS6080A- on the shaft bevel gear alignment pin -B- and set it to “0” with 1 mm pre-tension.
- Turn the output flange one complete rotation in direction of -arrow-.
- Read the measured value on the dial gauge.
- Maximum radial run-out = 0.07 mm.
- Install the bevel box. Refer to ⇒ “6.2 Bevel Box, Installing”, page 64 .
- Check the level of the gear oil inside the bevel box. Refer to ⇒ “3.1 Gear Oil, Checking Level”, page 98 .

Tightening Specifications

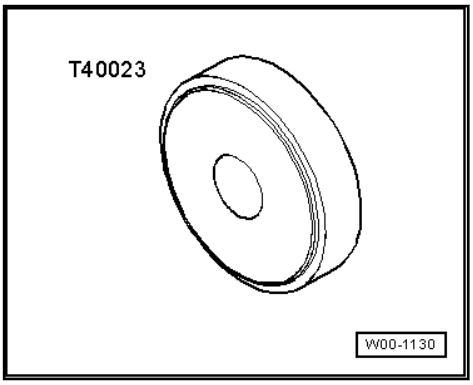
- Refer to ⇒ “4.1.3 Overview - Bevel Box Components, 0A6 in Audi Q3”, page 108

4.5 Right Stub Shaft Needle Bearing (Polygon Bearing), Replacing

Special tools and workshop equipment required



- Press Plate - VW401-
- Press Plate - VW402-
- Press Piece - Rod - VW407-
- Press Piece - Multiple Use - VW412-
- Rear Wheel Bearing Kit - Piece 5 -3253/5- from Rear Wheel Bearing Kit - Piece 5 - 3253/5-
- Bearing Installer - Needle Bearing - T10047-
- Thrust Piece - T40023-

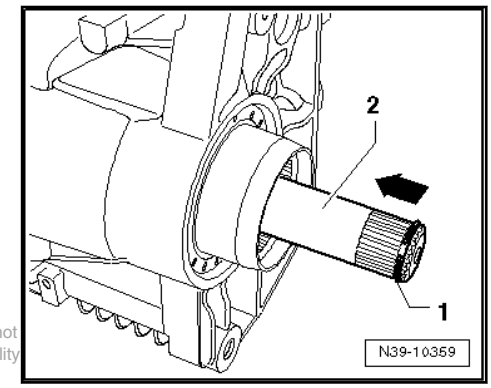


Procedure

- The bevel box is removed. Refer to ⇒ “6.1 Bevel Box, Removing”, page 61 .

– Remove the circlip -1- from the stub shaft -2-.

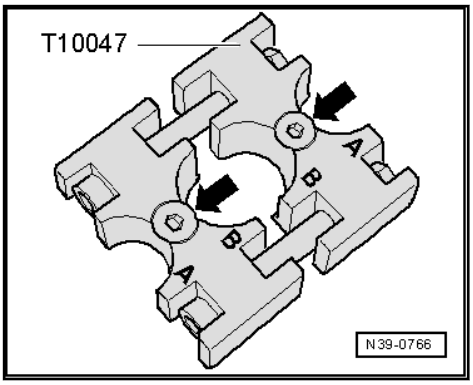
– Carefully remove the stub shaft -2- using a plastic hammer in the direction of the arrow.



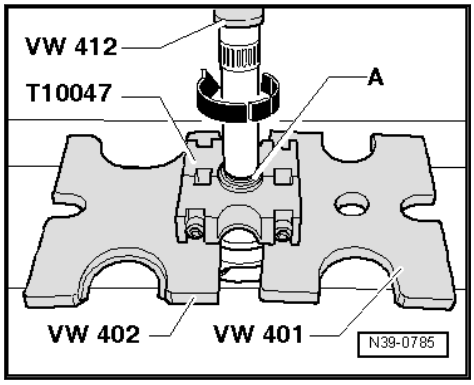
– Mount the Bearing Installer - Needle Bearing - T10047- as shown.

- The markings “B” on both parts face each other.
- The depressions -arrows- must be under the bearing.

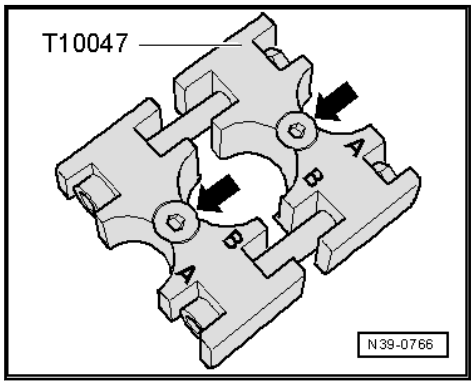
– Bolt the parts together all the way.



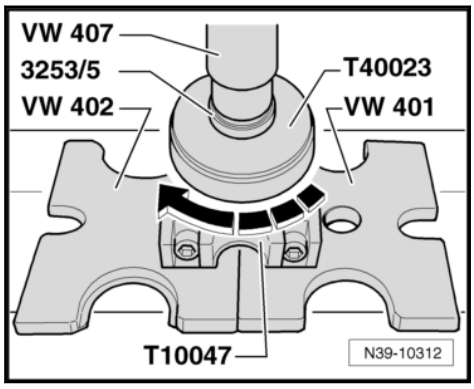
– Remove the circlip -A-.
– The shaft must be rotated when pressing off -arrow- so that the needle bearing contact surface on the shaft is not damaged.



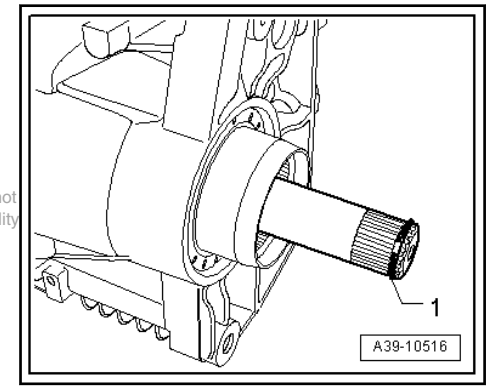
– Mount the Bearing Installer - Needle Bearing - T10047- as shown.



– The shaft must be rotated when pressing on -arrow- so that the needle bearing contact surface on the shaft is not damaged.
– Secure the needle bearing with a new circlip.
– Carefully drive in the stub shaft all the way into the bevel box with a plastic mallet.



– Install a new circlip -1- on the stub shaft.



Cautions & Warnings

Please read these WARNINGS and CAUTIONS before proceeding with maintenance and repair work. You must answer that you have read and you understand these WARNINGS and CAUTIONS before you will be allowed to view this information.

- If you lack the skills, tools and equipment, or a suitable workshop for any procedure described in this manual, we suggest you leave such repairs to an authorized Audi retailer or other qualified shop. We especially urge you to consult an authorized Audi retailer before beginning repairs on any vehicle that may still be covered wholly or in part by any of the extensive warranties issued by Audi.

- Disconnect the battery negative terminal (ground strap) whenever you work on the fuel system or the electrical system. Do not smoke or work near heaters or other fire hazards. Keep an approved fire extinguisher handy.

- Audi is constantly improving its vehicles and sometimes these changes, both in parts and specifications, are made applicable to earlier models. Therefore, part numbers listed in this manual are for reference only. Always check with your authorized Audi retailer parts department for the latest information.

- Any time the battery has been disconnected on an automatic transmission vehicle, it will be necessary to reestablish Transmission Control Module (TCM) basic settings using the Audi Factory Approved Scan Tool (ST).

- Never work under a lifted vehicle unless it is solidly supported on stands designed for the purpose. Do not support a vehicle on cinder blocks, hollow tiles or other props that may crumble under continuous load. Never work under a vehicle that is supported solely by a jack. Never work under the vehicle while the engine is running.

- For vehicles equipped with an anti-theft radio, be sure of the correct radio activation code before disconnecting the battery or removing the radio. If the wrong code is entered when the power is restored, the radio may lock up and become inoperable, even if the correct code is used in a later attempt.

- If you are going to work under a vehicle on the ground, make sure that the ground is level. Block the wheels to keep the vehicle from rolling. Disconnect the battery negative terminal (ground strap) to prevent others from starting the vehicle while you are under it.

- Do not attempt to work on your vehicle if you do not feel well. You increase the danger of injury to yourself and others if you are tired, upset or have taken medicine or any other substances that may impair you or keep you from being fully alert.

- Never run the engine unless the work area is well ventilated. Carbon monoxide (CO) kills.

- Always observe good workshop practices. Wear goggles when you operate machine tools or work with acid. Wear goggles, gloves and other protective clothing whenever the job requires working with harmful substances.

- Tie long hair behind your head. Do not wear a necktie, a scarf, loose clothing, or a necklace when you work near machine tools or running engines. If your hair, clothing, or jewelry were to get caught in the machinery, severe injury could result.

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- Do not re-use any fasteners that are worn or deformed in normal use. Some fasteners are designed to be used only once and are unreliable and may fail if used a second time. This includes, but is not limited to, nuts, bolts, washers, circlips and cotter pins. Always follow the recommendations in this manual - replace these fasteners with new parts where indicated, and any other time it is deemed necessary by inspection.

- Illuminate the work area adequately but safely. Use a portable safety light for working inside or under the vehicle. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.

- Friction materials such as brake pads and clutch discs may contain asbestos fibers. Do not create dust by grinding, sanding, or by cleaning with compressed air. Avoid breathing asbestos fibers and asbestos dust. Breathing asbestos can cause serious diseases such as asbestosis or cancer, and may result in death.

- Finger rings should be removed so that they cannot cause electrical shorts, get caught in running machinery, or be crushed by heavy parts.

- Before starting a job, make certain that you have all the necessary tools and parts on hand. Read all the instructions thoroughly, do not attempt shortcuts. Use tools that are appropriate to the work and use only replacement parts meeting Audi specifications. Makeshift tools, parts and procedures will not make good repairs.

- Catch draining fuel, oil or brake fluid in suitable containers. Do not use empty food or beverage containers that might mislead someone into drinking from them. Store flammable fluids away from fire hazards. Wipe up spills at once, but do not store the oily rags, which can ignite and burn spontaneously.

- Use pneumatic and electric tools only to loosen threaded parts and fasteners. Never use these tools to tighten fasteners, especially on light alloy parts. Always use a torque wrench to tighten fasteners to the tightening torque listed.

- Keep sparks, lighted matches, and open flame away from the top of the battery. If escaping hydrogen gas is ignited, it will ignite gas trapped in the cells and cause the battery to explode.

- Be mindful of the environment and ecology. Before you drain the crankcase, find out the proper way to dispose of the oil. Do not pour oil onto the ground, down a drain, or into a stream, pond, or lake. Consult local ordinances that govern the disposal of wastes.

- The air-conditioning (A/C) system is filled with a chemical refrigerant that is hazardous. The A/C system should be serviced only by trained automotive service technicians using approved refrigerant recovery/recycling equipment, trained in related safety precautions, and familiar with regulations governing the discharging and disposal of automotive chemical refrigerants.

- Before doing any electrical welding on vehicles equipped with anti-lock brakes (ABS), disconnect the battery negative terminal (ground strap) and the ABS control module connector.

- Do not expose any part of the A/C system to high temperatures such as open flame. Excessive heat will increase system pressure and may cause the system to burst.

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- When boost-charging the battery, first remove the fuses for the Engine Control Module (ECM), the Transmission Control Module (TCM), the ABS control module, and the trip computer. In cases where one or more of these components is not separately fused, disconnect the control module connector(s).

- Some of the vehicles covered by this manual are equipped with a supplemental restraint system (SRS), that automatically deploys an airbag in the event of a frontal impact. The airbag is operated by an explosive device. Handled improperly or without adequate safeguards, it can be accidentally activated and cause serious personal injury. To guard against personal injury or airbag system failure, only trained Audi Service technicians should test, disassemble or service the airbag system.

- Do not quick-charge the battery (for boost starting) for longer than one minute, and do not exceed 16.5 volts at the battery with the boosting cables attached. Wait at least one minute before boosting the battery a second time.

- Never use a test light to conduct electrical tests of the airbag system. The system must only be tested by trained Audi Service technicians using the Audi Factory Approved Scan Tool (ST) or an approved equivalent. The airbag unit must never be electrically tested while it is not installed in the vehicle.

- Some aerosol tire inflators are highly flammable. Be extremely cautious when repairing a tire that may have been inflated using an aerosol tire inflator. Keep sparks, open flame or other sources of ignition away from the tire repair area. Inflate and deflate the tire at least four times before breaking the bead from the rim. Completely remove the tire from the rim before attempting any repair.

- When driving or riding in an airbag-equipped vehicle, never hold test equipment in your hands or lap while the vehicle is in motion. Objects between you and the airbag can increase the risk of injury in an accident.

I have read and I understand these Cautions and Warnings.

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